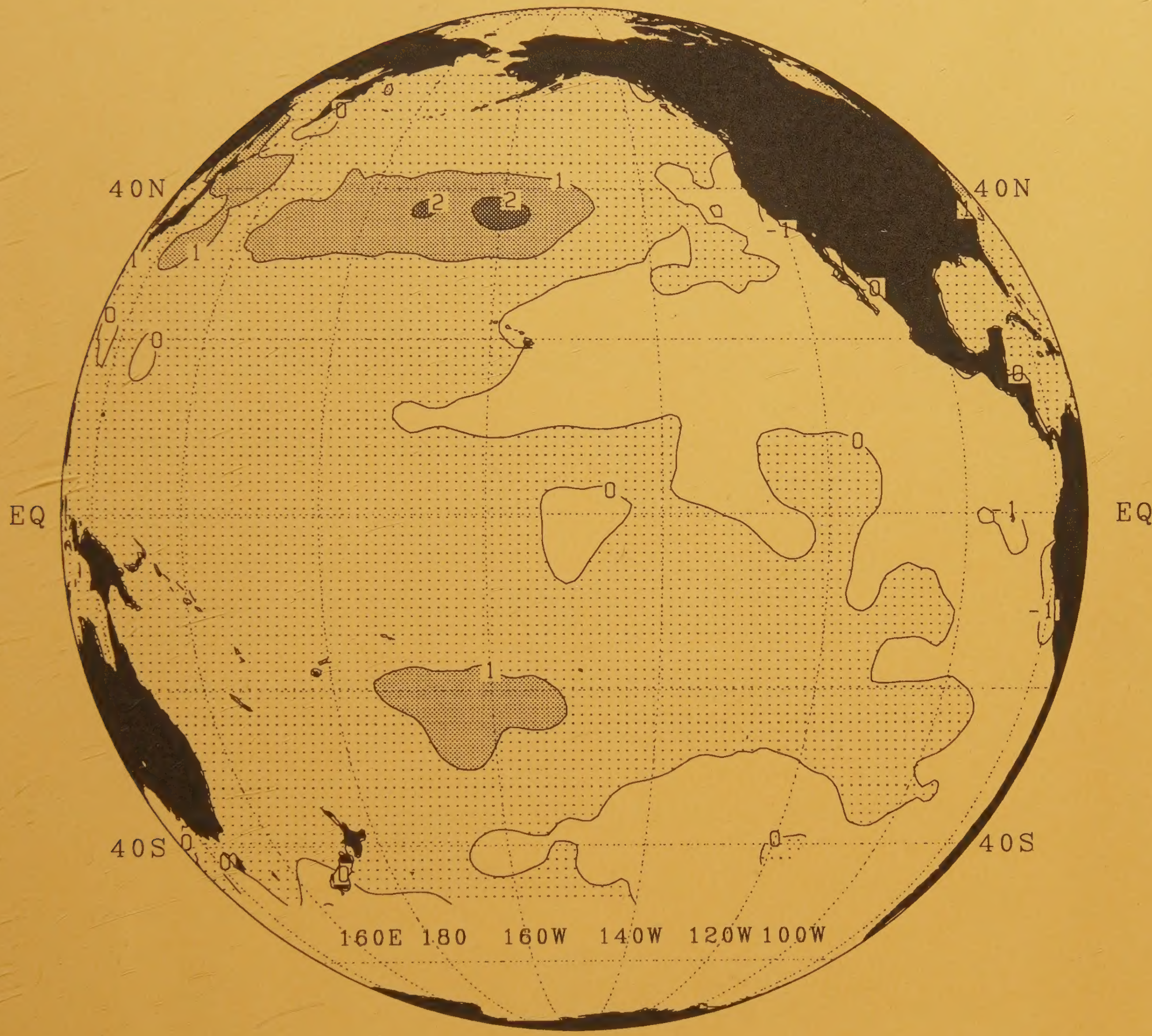
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気 象 庁 海 洋 月 報

Monthly Ocean Report
October 2005 (No. 154)



Global Environment and Marine Department
Japan Meteorological Agency

気 象 庁 地 球 環 境・海 洋 部

平 成 1 7 年 1 0 月

気象庁海洋月報は、気象庁 地球環境・海洋部 海洋気象情報室で作成しています。
本月報に関する問い合わせは、

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Monthly Ocean Report is prepared by the Office of Marine Prediction, Global Environment and Marine Department, Japan Meteorological Agency.

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表紙は、2005 年 10 月の太平洋の月平均海面水温偏差図です。
陰影部は、平年より高温の海域を示しています。

The figure on the front cover shows the monthly mean SST anomalies for October 2005 in the Pacific Ocean.
Areas of positive anomalies are shaded.

目　次

* MGDSST (Merged satellite and *in-situ* data Global Daily SST)を使用している。

** 従来と同様の、現場観測による海面水温をもとにした解析値を使用している。

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* Based on MGDSST (Merged satellite and *in-situ* data Global Daily SST).

** Based on the traditional analysis using *in-situ* SSTs.

海況の特徴（２００５年１０月）

日本近海の海況

海面水温は、全般に平年より高く、北海道周辺の海域と日本海北部で平年より2℃以上高かった（第４図）。

黒潮は、四国から紀伊半島に接岸した後、東海沖を東へ流れ、八丈島付近を通過していた。その後、141° E付近で北東に向きを変え、房総沖を北東に流れていた（第９図）。

太平洋の海況

太平洋赤道域の海面水温は、140° Eから170° E にかけて平年より0.5℃以上高かった。一方、95° W付近では-1℃を超える負偏差が見られた。

北太平洋の海面水温は、ほぼ全域で平年より高く、35° N に沿った 165° E から 145° W の海域で+1℃を超える正偏差が見られた（第１７図）。

Highlights October 2005

Seas adjacent to Japan

SSTs were generally above normal. SSTs were more than 2℃ above normal in the seas around Hokkaido and the northern part of the Japan Sea (Fig. 4).

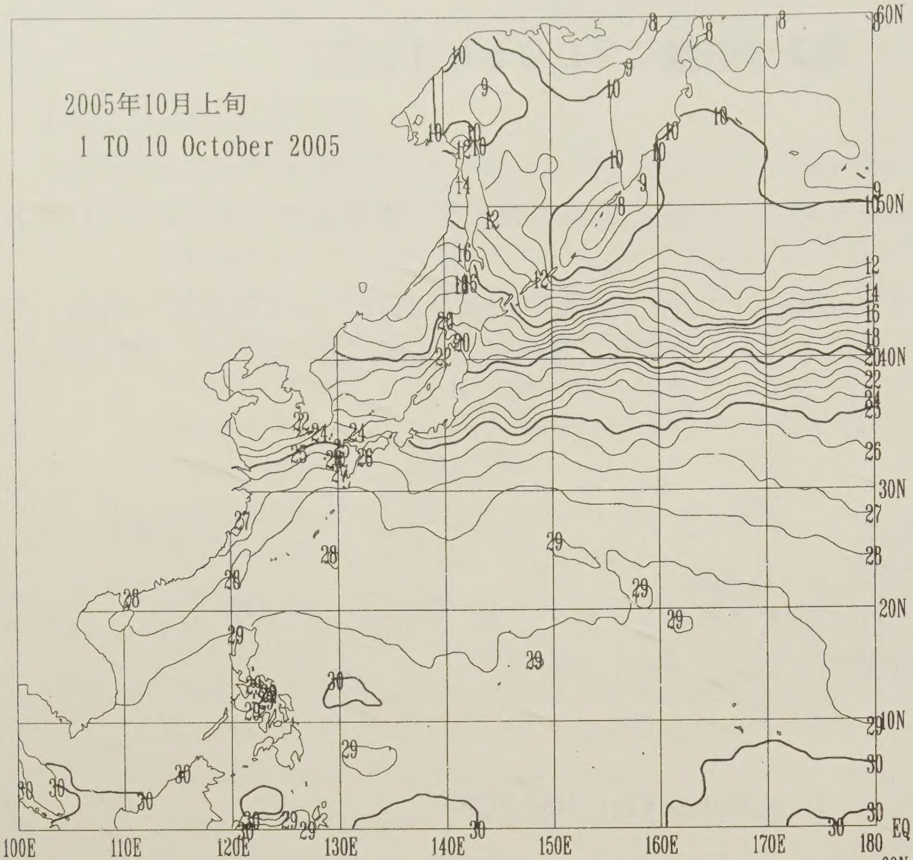
The Kuroshio flowed close to Shikoku and the Kii Peninsula and flowed eastward off Tokai. It passed near Hachijo Island. After turning NE-ward at about 141°E, it flowed NE-ward off the Boso Peninsula throughout the month (Fig. 9).

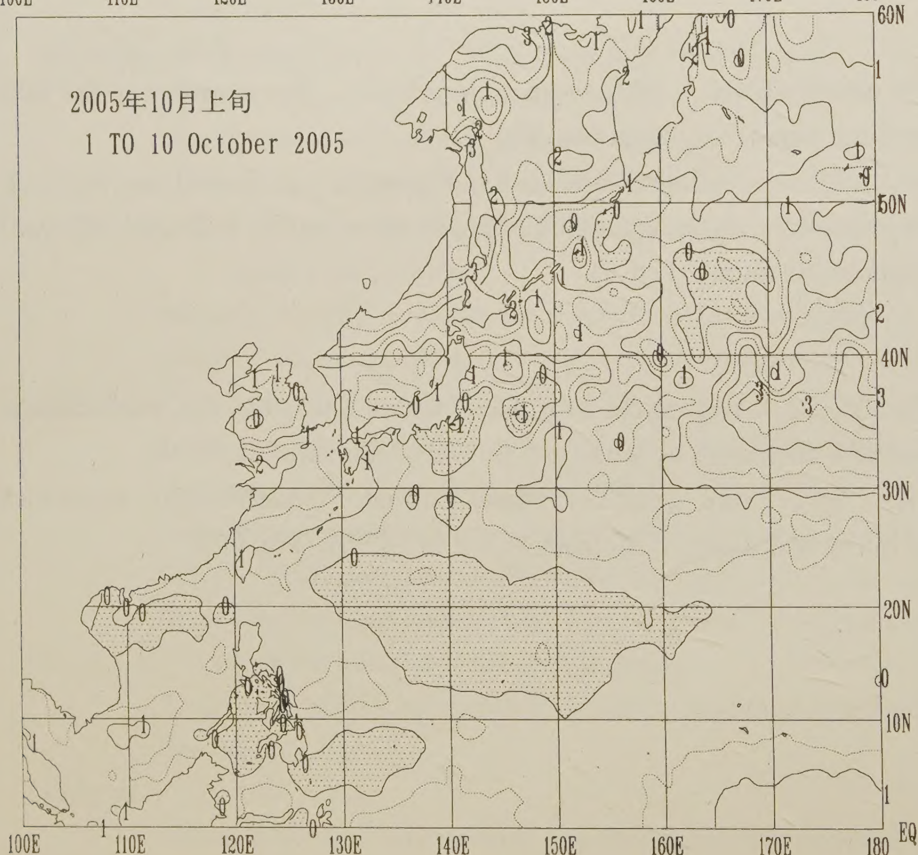
Pacific Ocean

In the equatorial Pacific, SSTs were more than 0.5℃ above normal in the seas between 140°E and 170°E. Negative SST anomalies exceeding -1℃ were found around 95°W.

In the North Pacific, SSTs were generally above normal. Positive SST anomalies exceeding +1℃ were found in the seas along 35°N from 165°E to 145°W (Fig. 17).

Ten-day mean SST & Anomalies





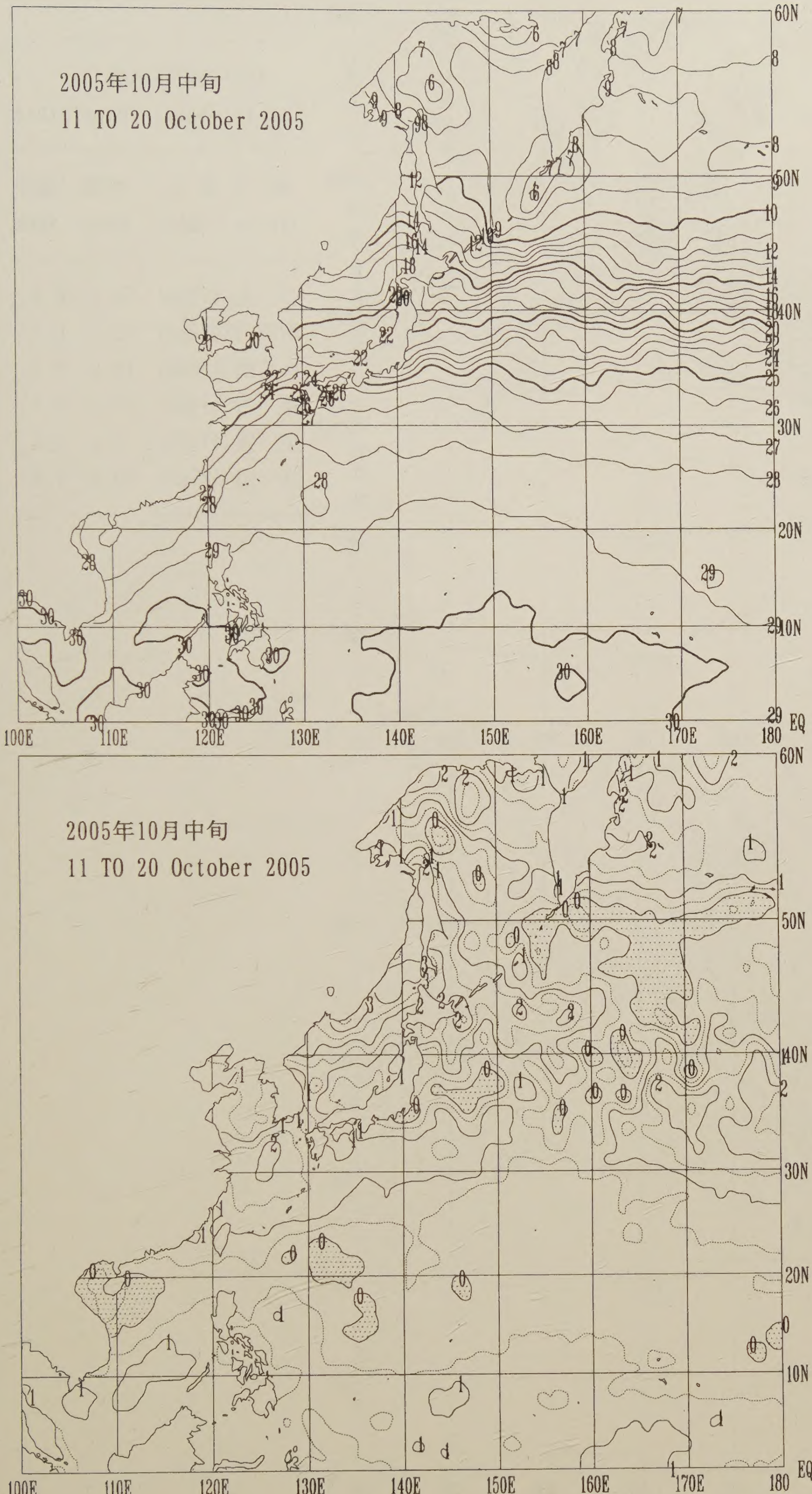
旬平均沿岸水温 (℃)
Coastal Water Temperature

地点名 (Index Number)	水温 Temp.	偏差 Anom.
石　垣 (47918)	28.1	0.7
御前崎 (47655)	22.6	0.1
小名浜 (47598)	20.7	0.2
宮　古 (47585)	18.8	0.0
江　差 (47428)	19.7	0.7
浜　田 (47755)	23.9	1.0

第1図 北西太平洋旬平均海面水温図 (上) 及び偏差図 (下) (2005年10月上旬)

Fig. 1 Ten-day mean SST (top) and anomalies (bottom) in the western North Pacific for the 1st ten-day period in October 2005. Anomalies are computed from the JMA climatology (1971-2000). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown by broken lines. Negative anomalies are stippled.

Ten-day mean SST & Anomalies



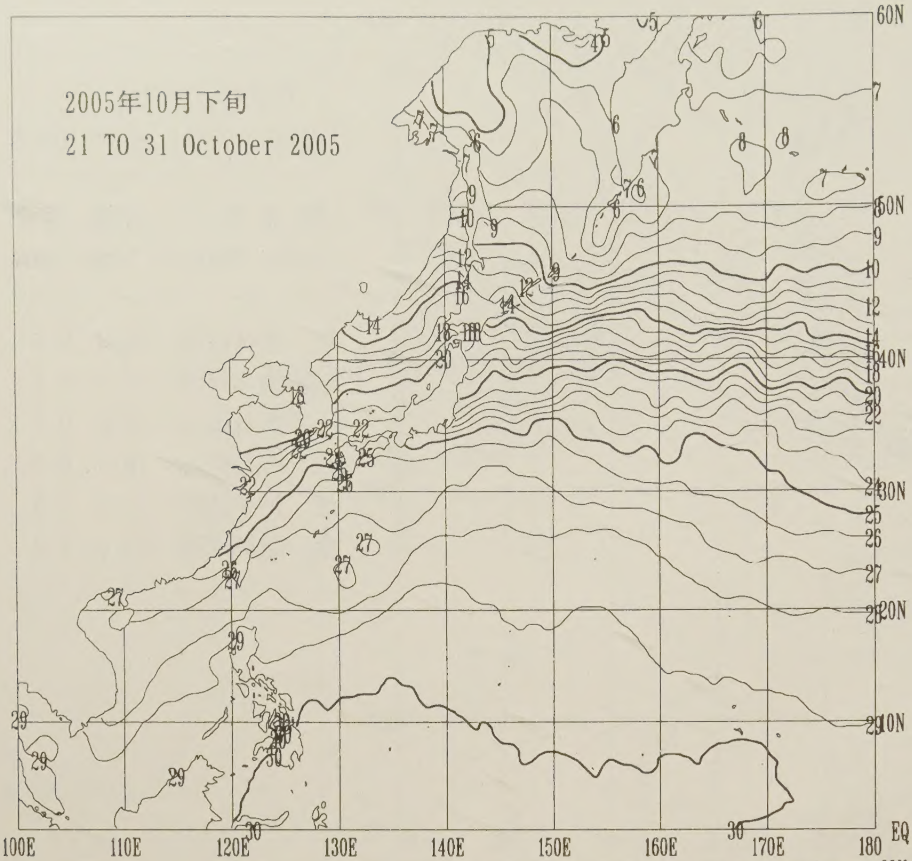
旬平均沿岸水温 (℃)
Coastal Water Temperature

地 点 名 (Index Number)	水温 Temp.	偏差 Anom.
石　垣 (47918)	27. 0	0. 3
御前崎 (47655)	21. 2	-0. 1
小名浜 (47598)	19. 9	0. 3
宮　古 (47585)	18. 6	0. 5
江　差 (47428)	19. 2	1. 9
浜　田 (47755)	22. 9	1. 0

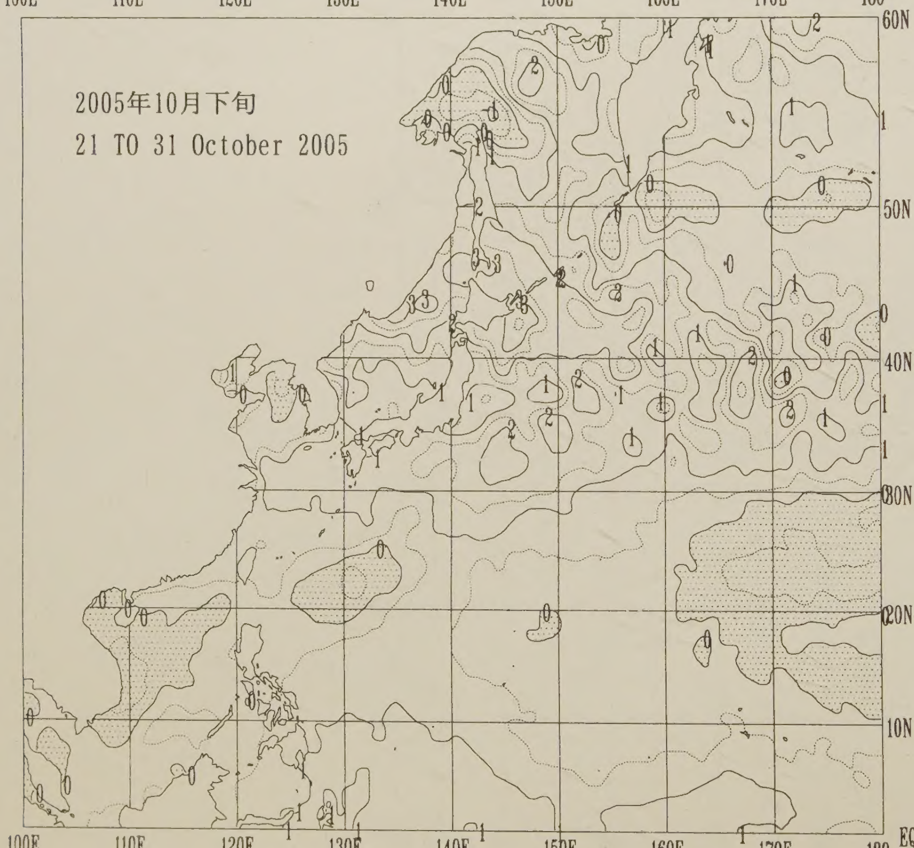
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Fig. 2 Ten-day mean SST (top) and anomalies (bottom) in the western North Pacific for the 2nd ten-day period in October 2005. Anomalies are computed from the JMA climatology (1971-2000). Contour interval is 1°C and additional anomaly contours of 0. 5°C are shown by broken lines. Negative anomalies are stippled.

Ten-day mean SST & Anomalies

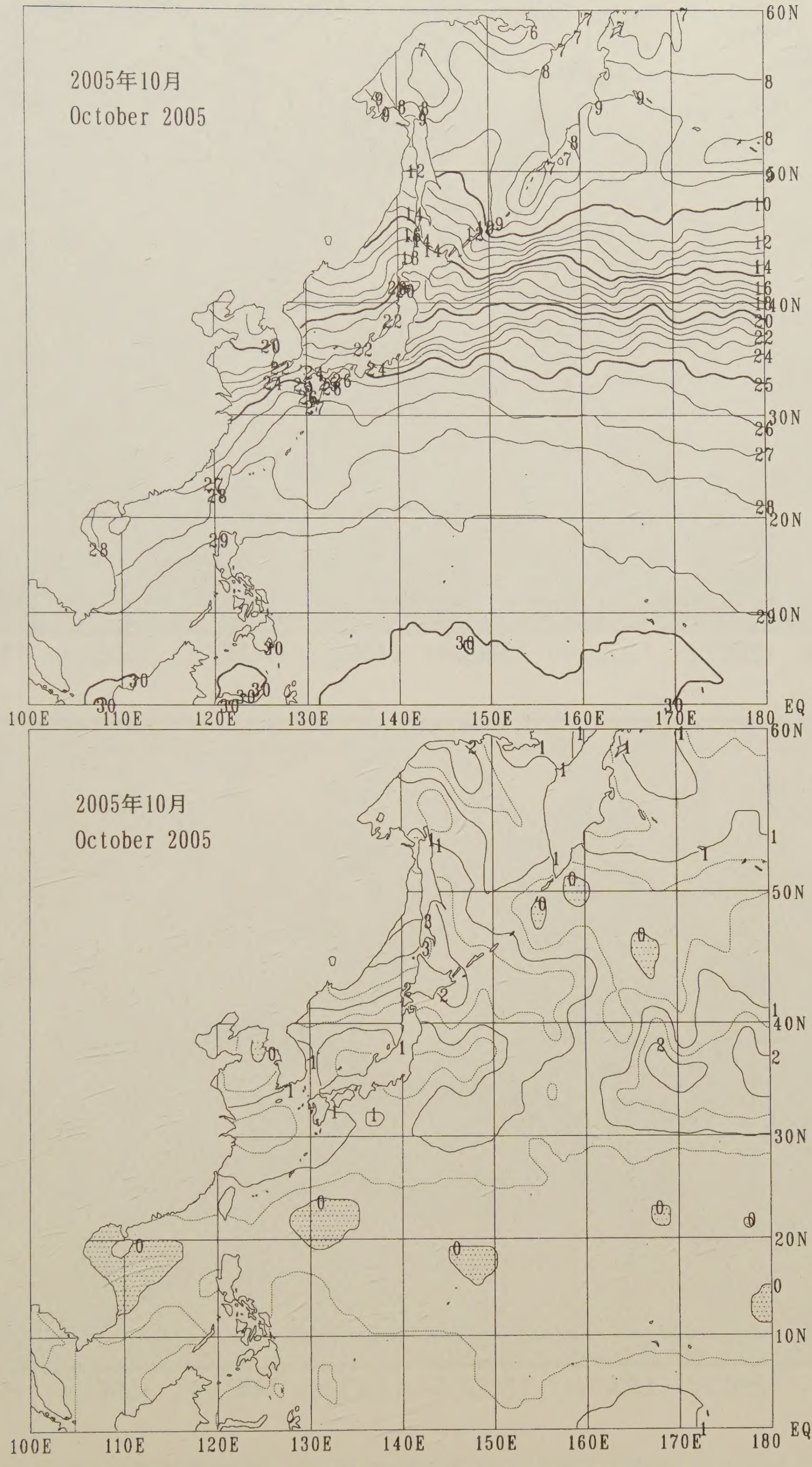


旬平均沿岸水温(℃) Coastal Water Temperature		
地点名 (Index Number)	水温 Temp.	偏差 Anom.
石　垣(47918)	26.3	0.3
御前崎(47655)	20.1	0.1
小名浜(47598)	18.9	0.4
宮　古(47585)	17.8	0.7
江　差(47428)	17.1	1.6
浜　田(47755)	20.6	0.0



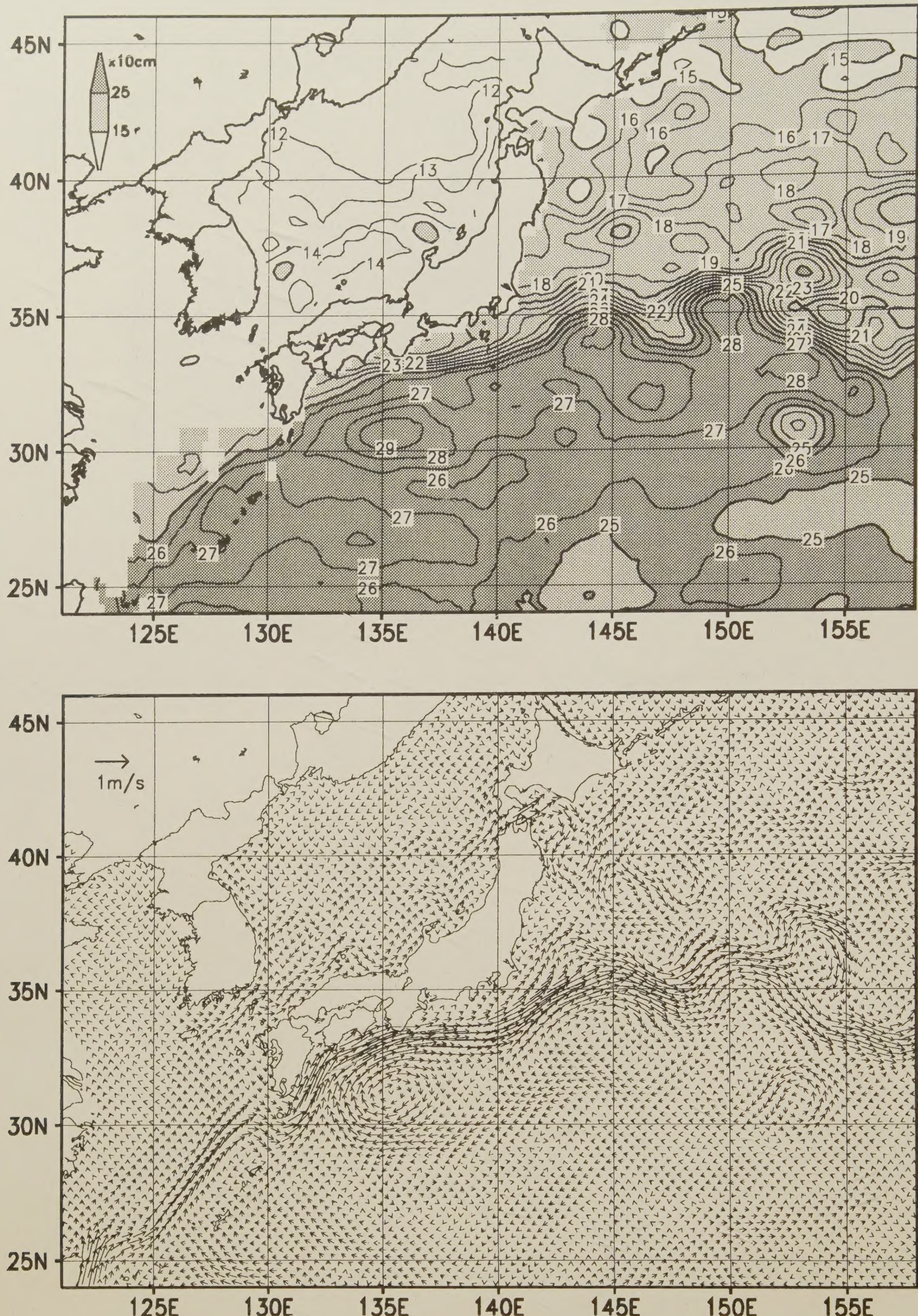
第3図 北西太平洋旬平均海面水温図(上)及び偏差図(下) (2005年10月下旬)

Fig.3 Ten-day mean SST (top) and anomalies (bottom) in the western North Pacific for the 3rd ten-day period in October 2005. Anomalies are computed from the JMA climatology (1971-2000). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown by broken lines. Negative anomalies are stippled.



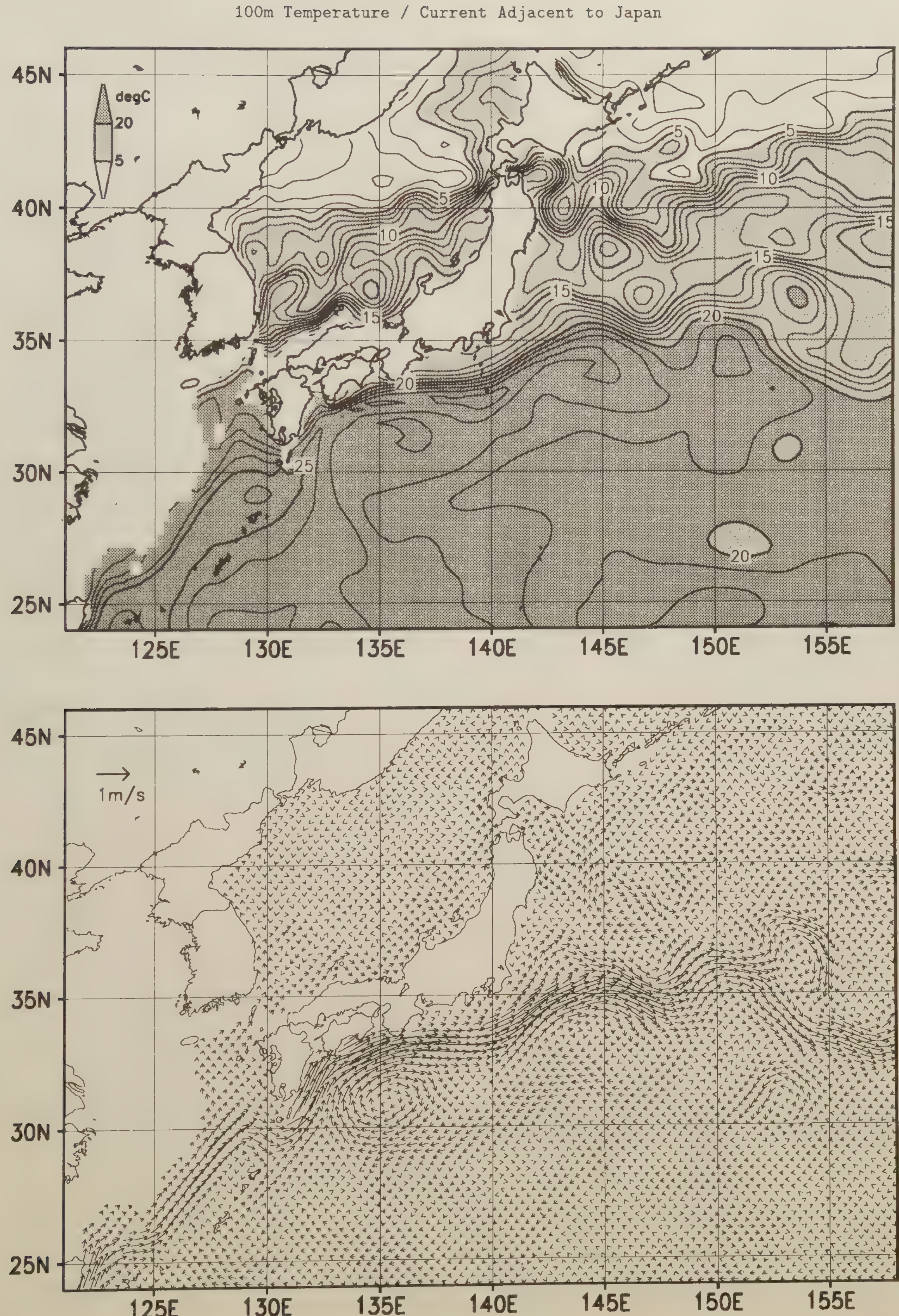
第4図 北西太平洋月平均海面水温図(上)及び偏差図(下) (2005年10月)

Fig. 4 Monthly mean SST (top) and anomalies (bottom) in the western North Pacific for October 2005. Anomalies are computed from the JMA climatology (1971-2000). Contour interval is 1°C and additional anomaly contours of 0.5°C are shown by broken lines. Negative anomalies are stippled.



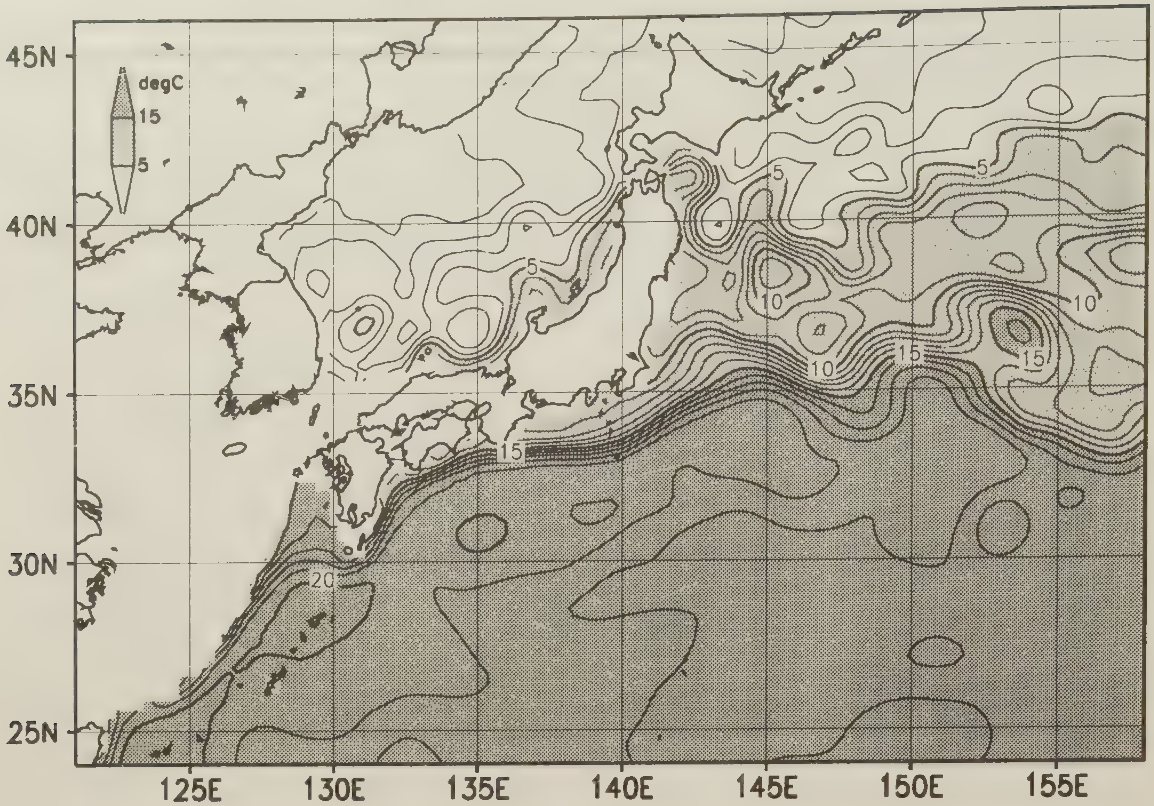
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（海洋総合解析システムによる）

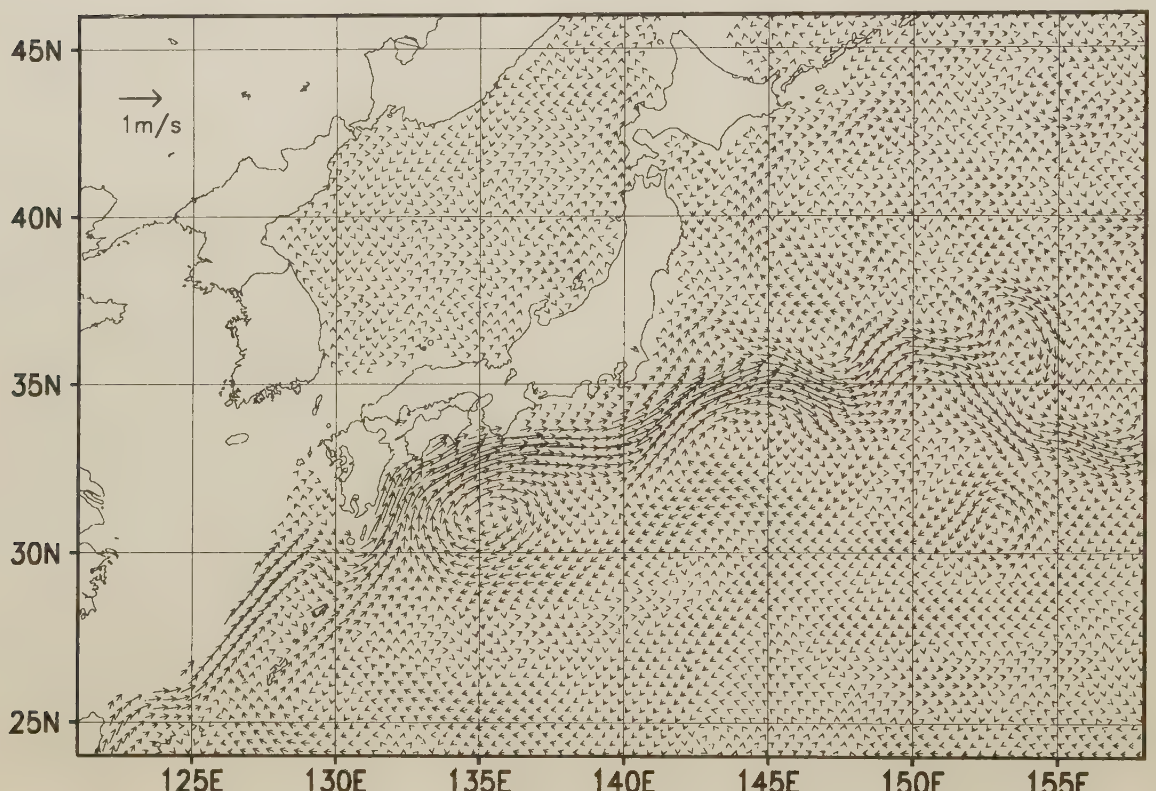
Fig. 5　Monthly mean sea surface height (top) and current (bottom) in seas adjacent to Japan for October 2005. Contour interval is 10cm (top). (calculated by the Ocean Comprehensive Analysis System)



第 6 図　日本近海月平均表層水温図（上）と表層海流図（下）（深さ 100 m）（2005 年 10 月）
（海洋総合解析システムによる）

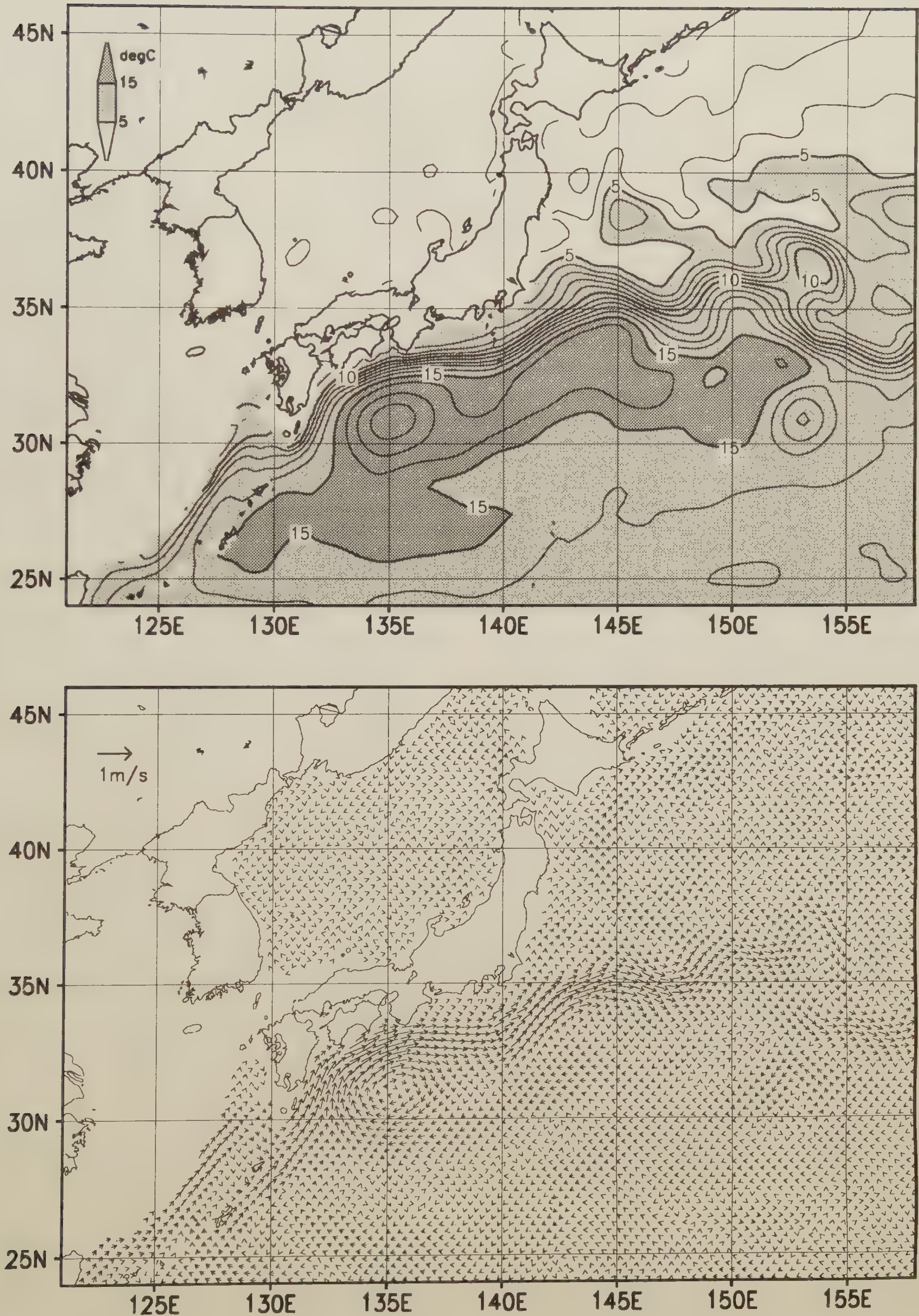
Fig. 6　Monthly mean subsurface (100 m) temperature (top) and current (bottom) in seas adjacent to Japan for October 2005. Contour interval is 1 ℃ (top). (calculated by the Ocean Comprehensive Analysis System)





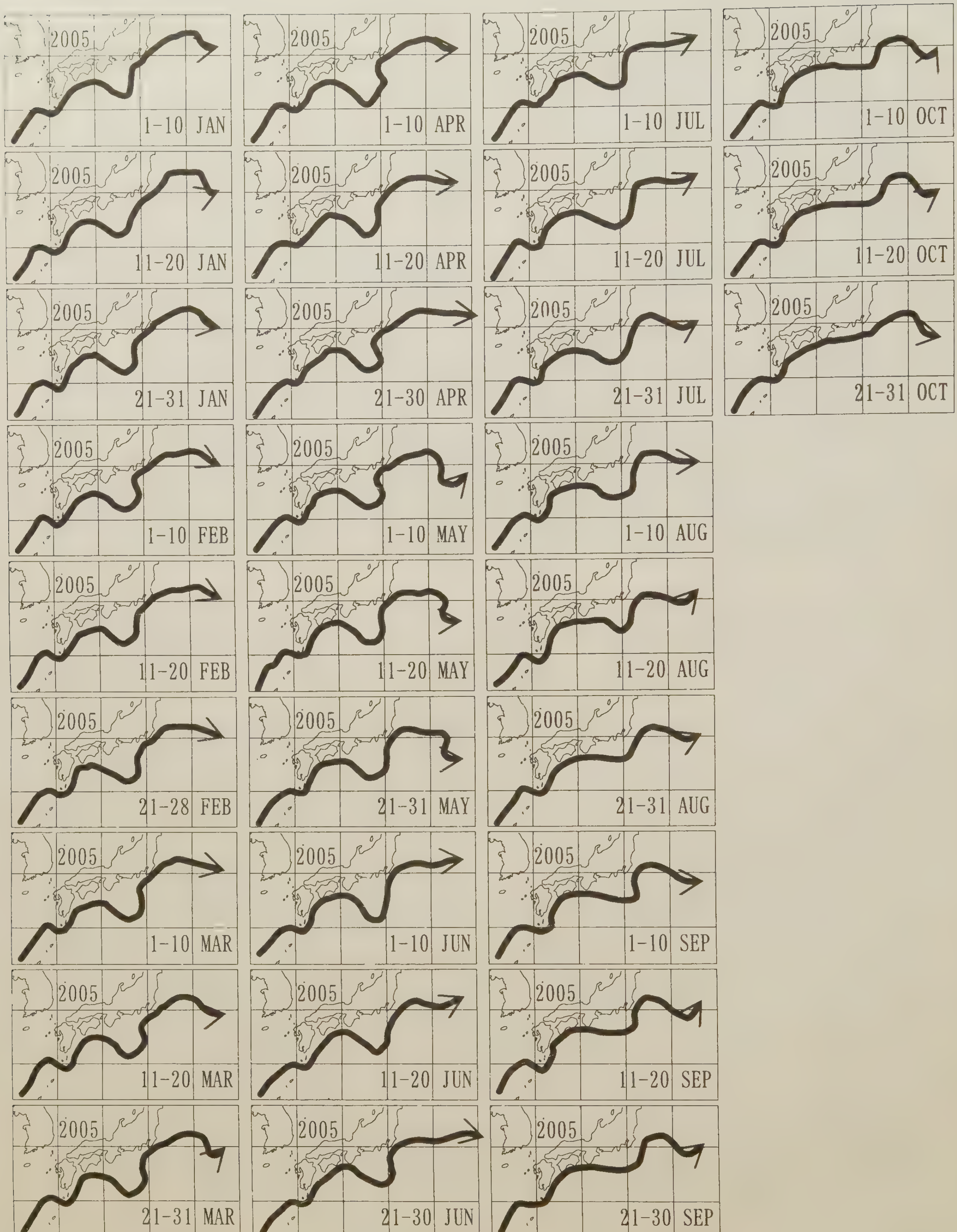
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（海洋総合解析システムによる）

Fig. 7　Monthly mean subsurface (200 m) temperature (top) and current (bottom) in seas adjacent to Japan for October 2005. Contour interval is 1 ℃ (top). (calculated by the Ocean Comprehensive Analysis System)



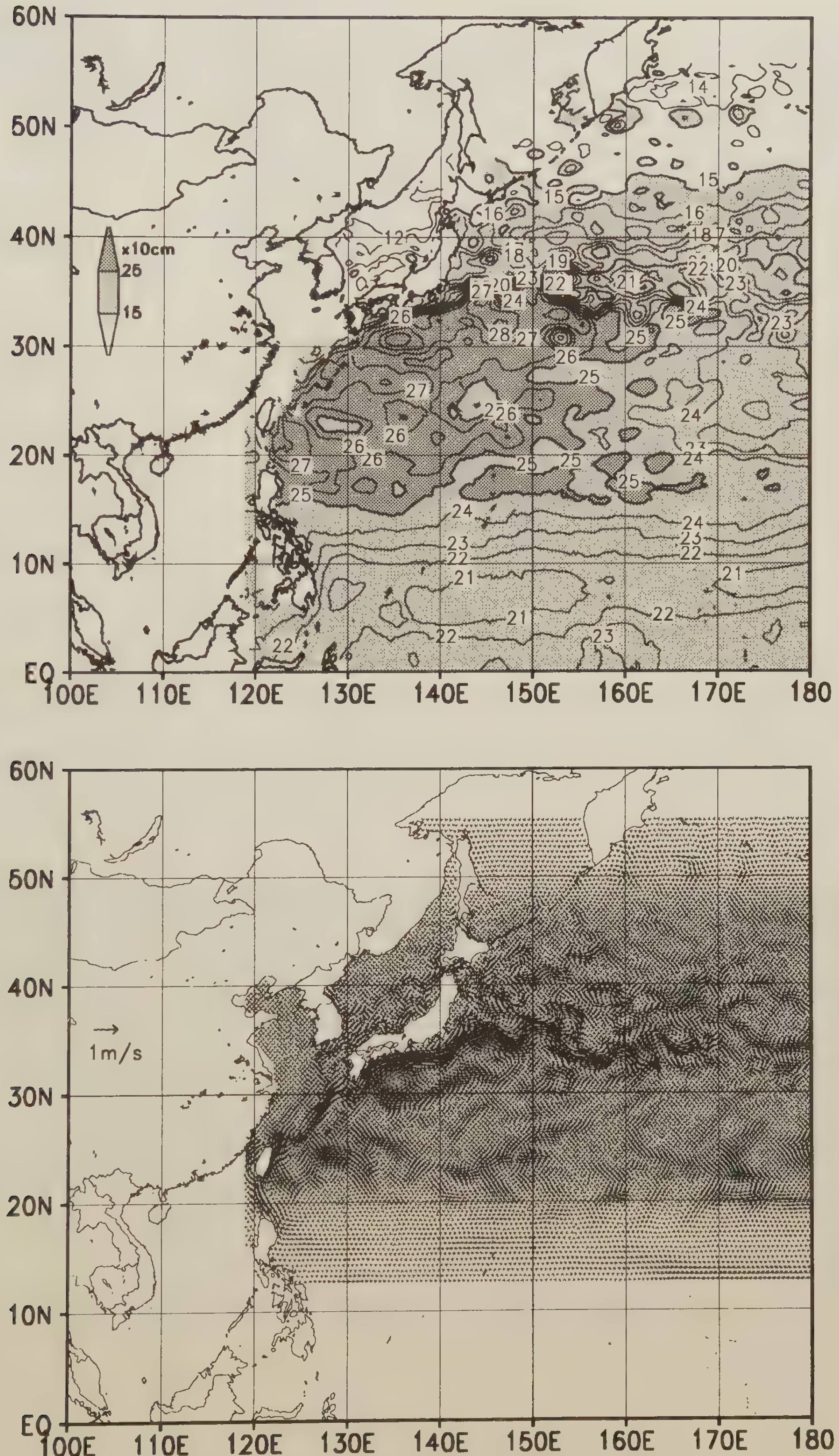
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（海洋総合解析システムによる）

Fig. 8　Monthly mean subsurface (400 m) temperature (top) and current (bottom) in seas adjacent to Japan for October 2005. Contour interval is 1 ℃ (top). (calculated by the Ocean Comprehensive Analysis System)



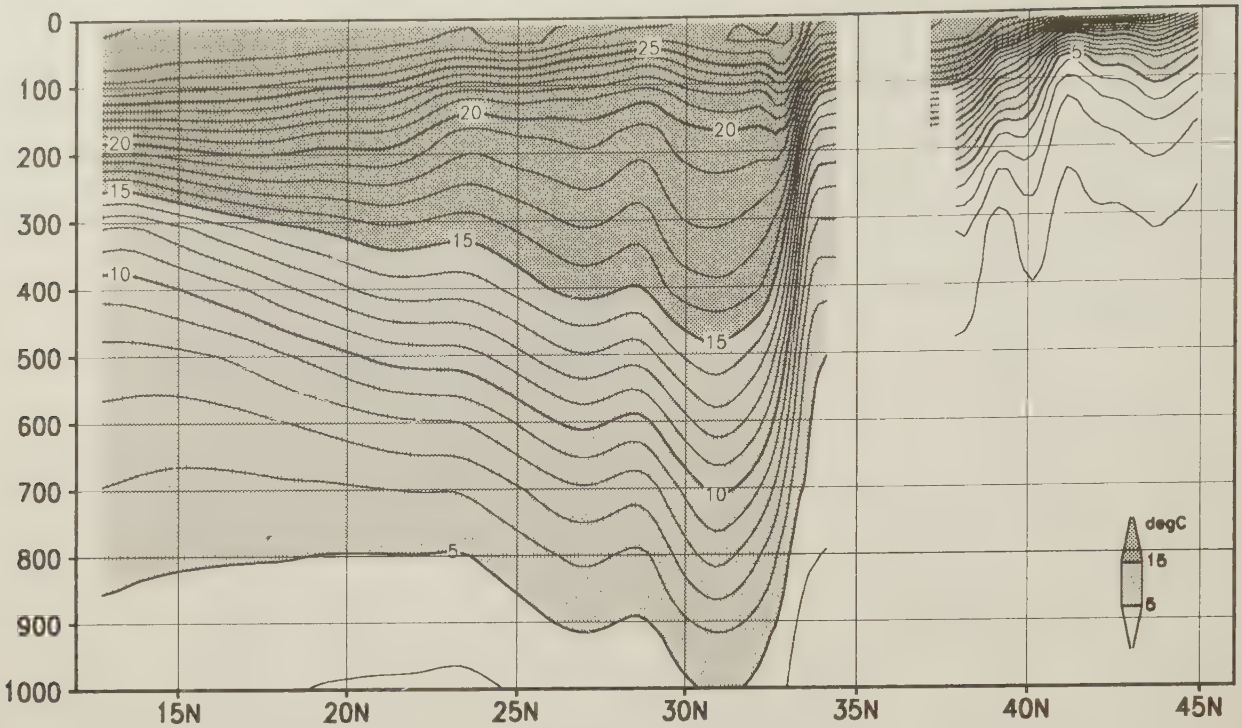
第9図 旬別黒潮流軸図

Fig. 9 Location of the Kuroshio axis



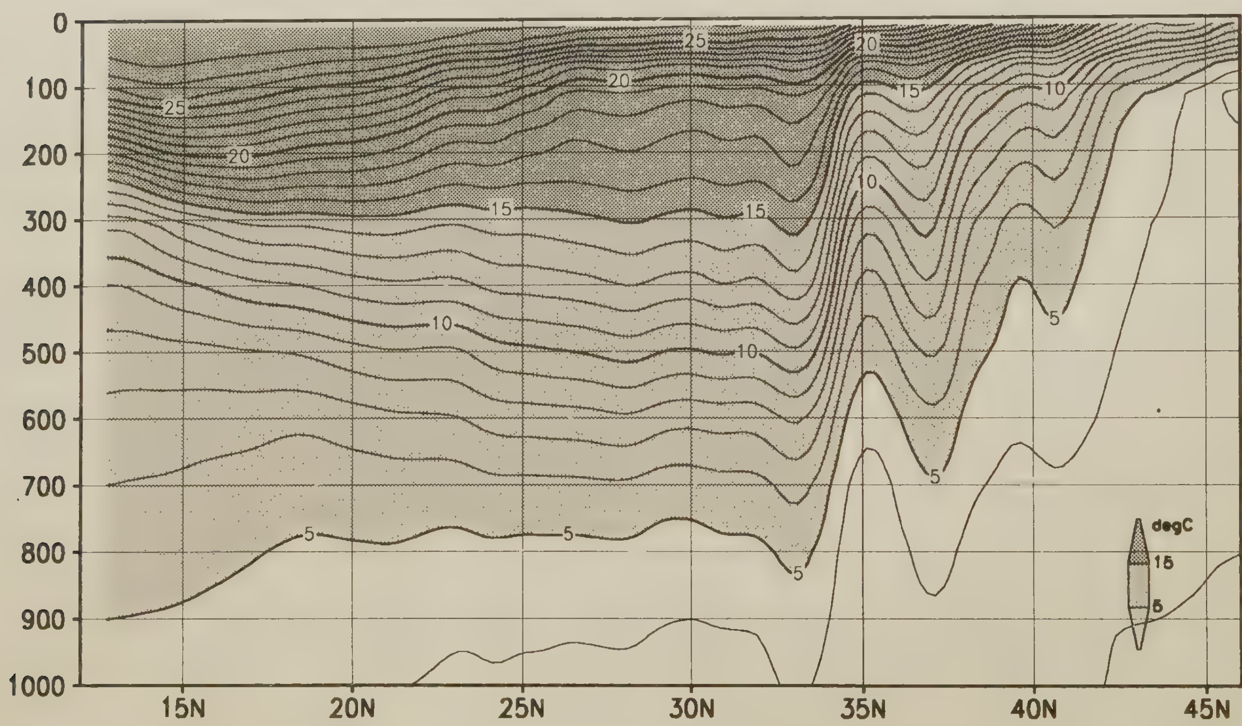
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Fig. 10　Monthly mean sea surface height (top) and current (bottom) in the western North Pacific for October 2005. Contour interval is 10cm (top). (calculated by the Ocean Comprehensive Analysis System)



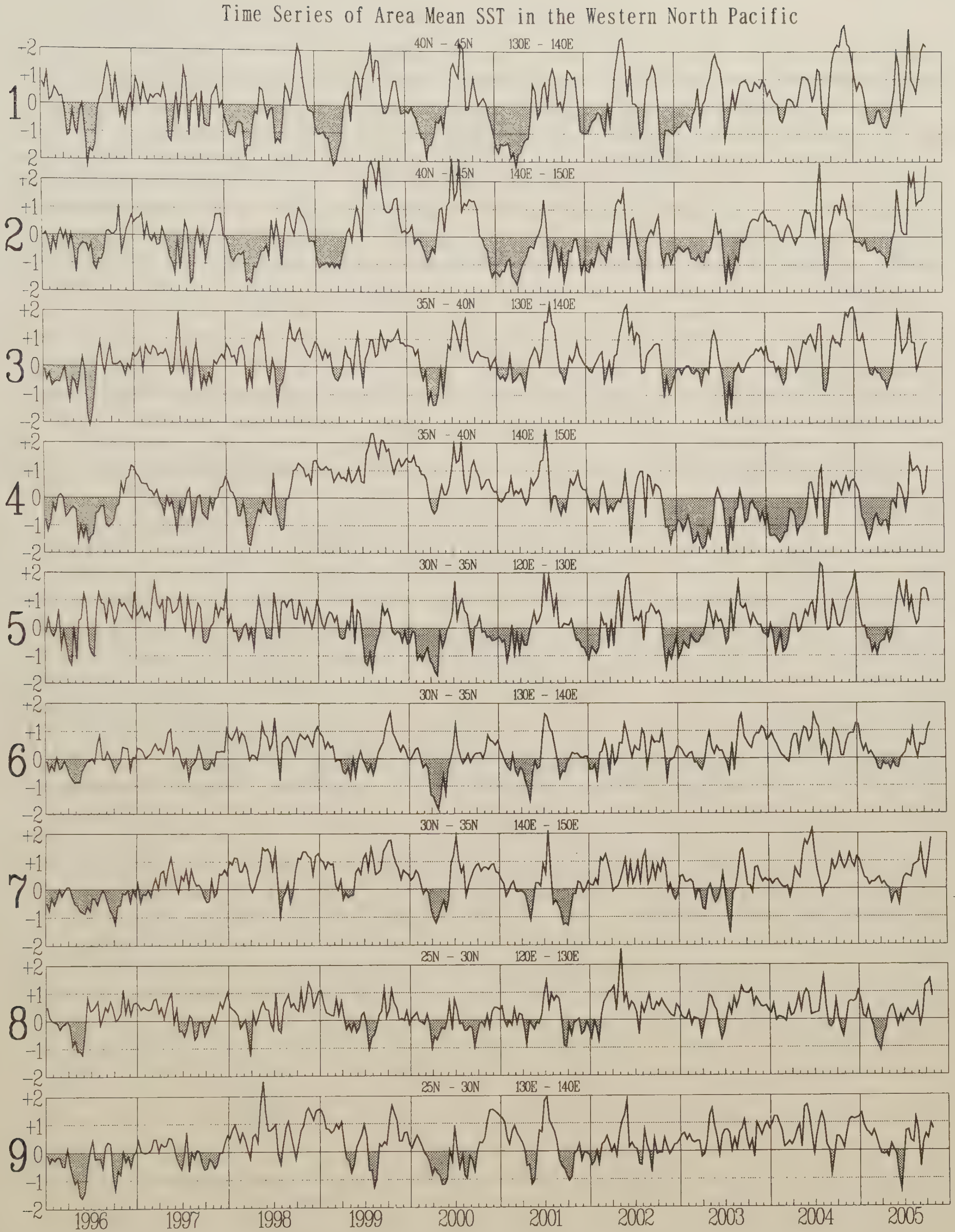
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（海洋総合解析システムによる）

Fig. 11　Vertical cross section of monthly mean temperature along 137 °E for October 2005. Contour interval is 1 ℃. (calculated by the Ocean Comprehensive Analysis System)



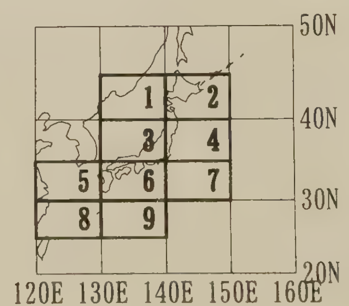
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（海洋総合解析システムによる）

Fig. 12　Vertical cross section of monthly mean temperature along 165 °E for October 2005. Contour interval is 1 ℃. (calculated by the Ocean Comprehensive Analysis System)

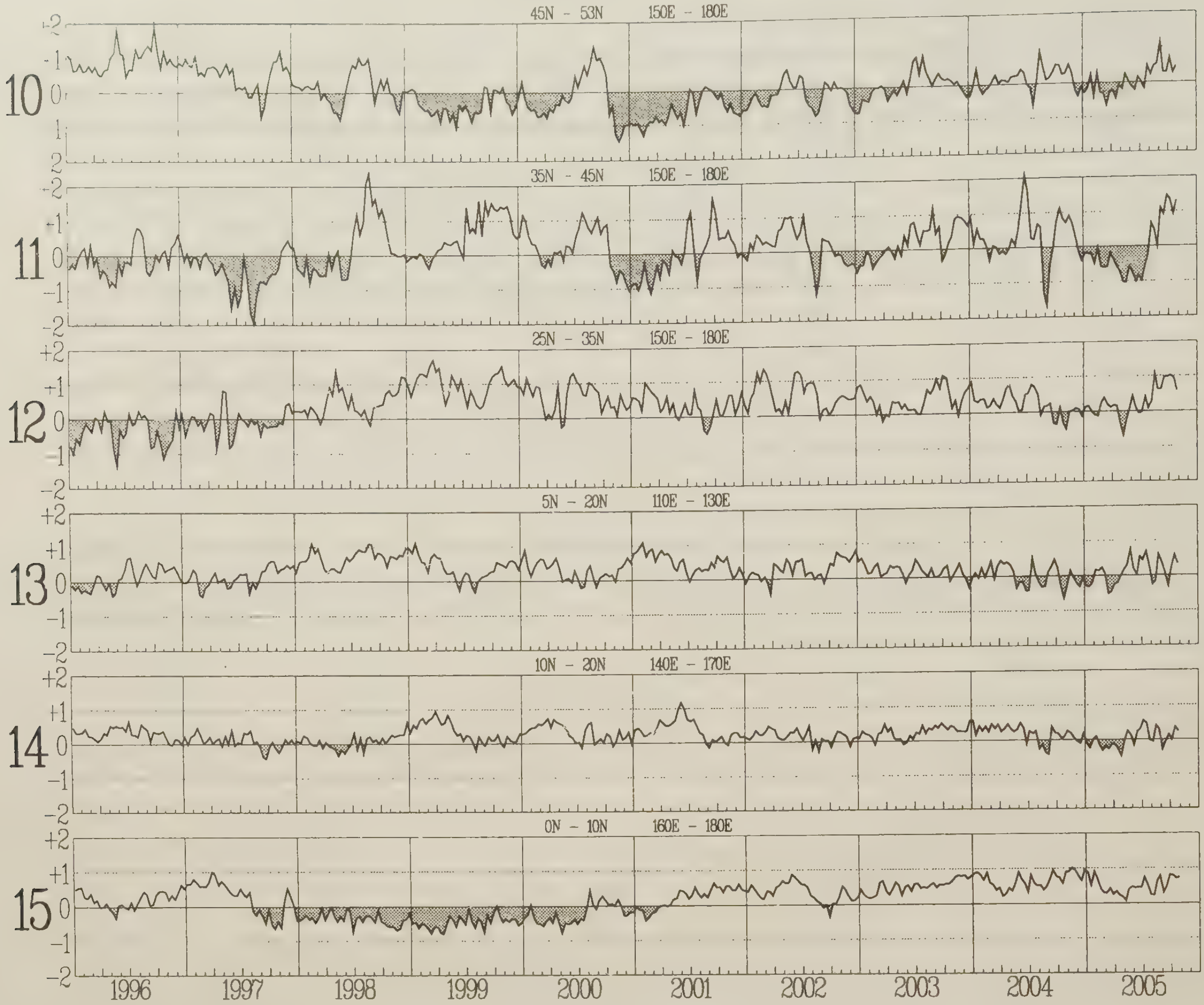


第13図　海域別旬平均海面水温平年偏差時系列図

Fig. 13 Time series of the ten-day mean SST anomalies (°C) averaged for the sub-areas shown in the right panel. Negative anomalies are shaded. Anomalies are computed from the JMA climatology (1971-2000).

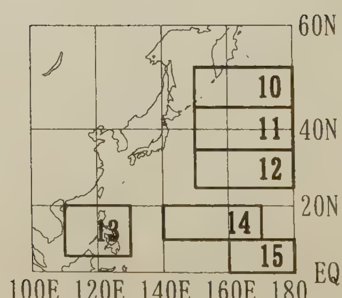


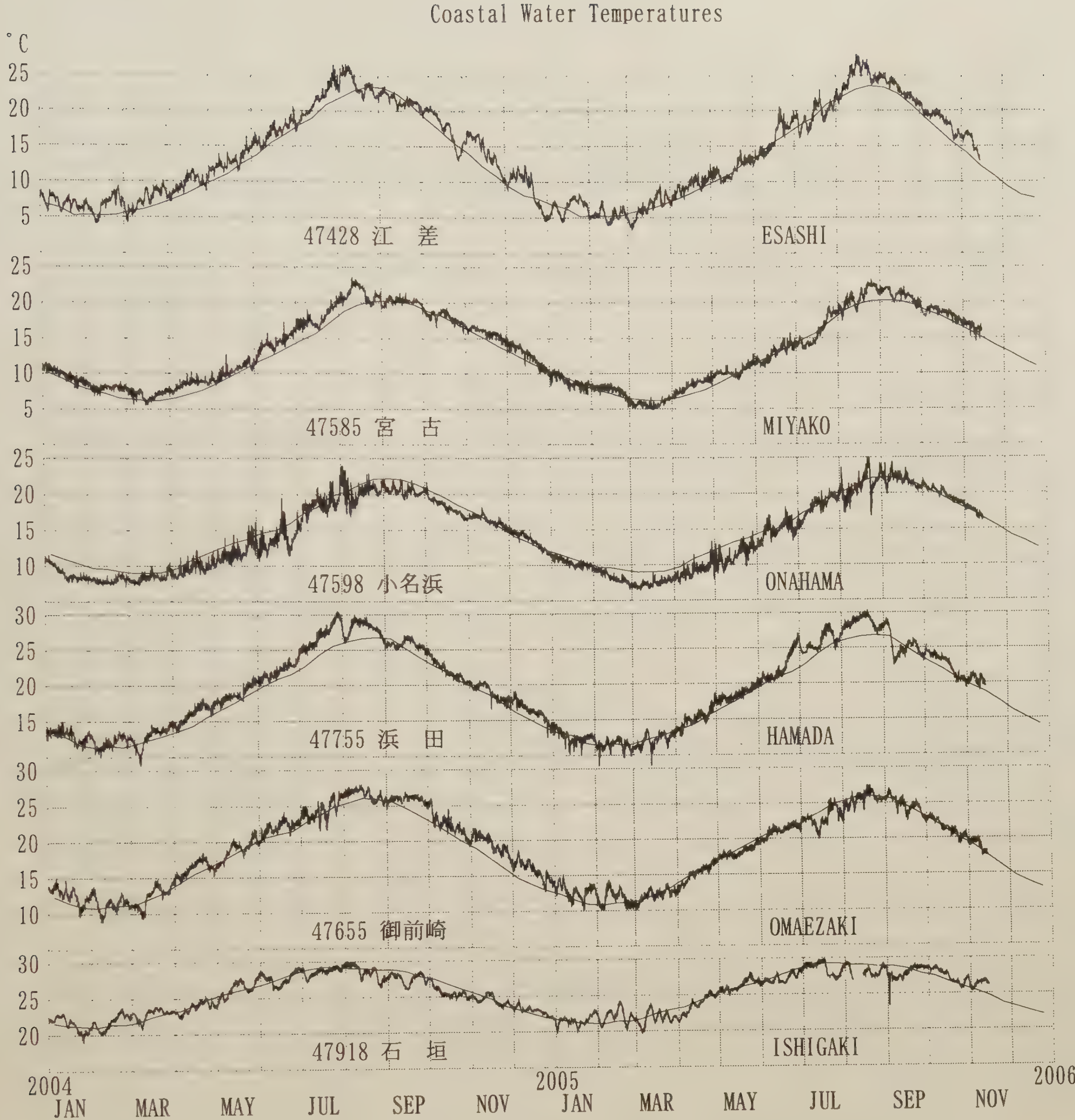
Time Series of Area Mean SST in the Western North Pacific



第13図　海域別旬平均海面水温平年偏差時系列図（つづき）

Fig. 13 (continued) Time series of the ten-day mean SST anomalies (°C) averaged for the sub-areas shown in the right panel. Negative anomalies are shaded. Anomalies are computed from the JMA climatology (1971-2000).



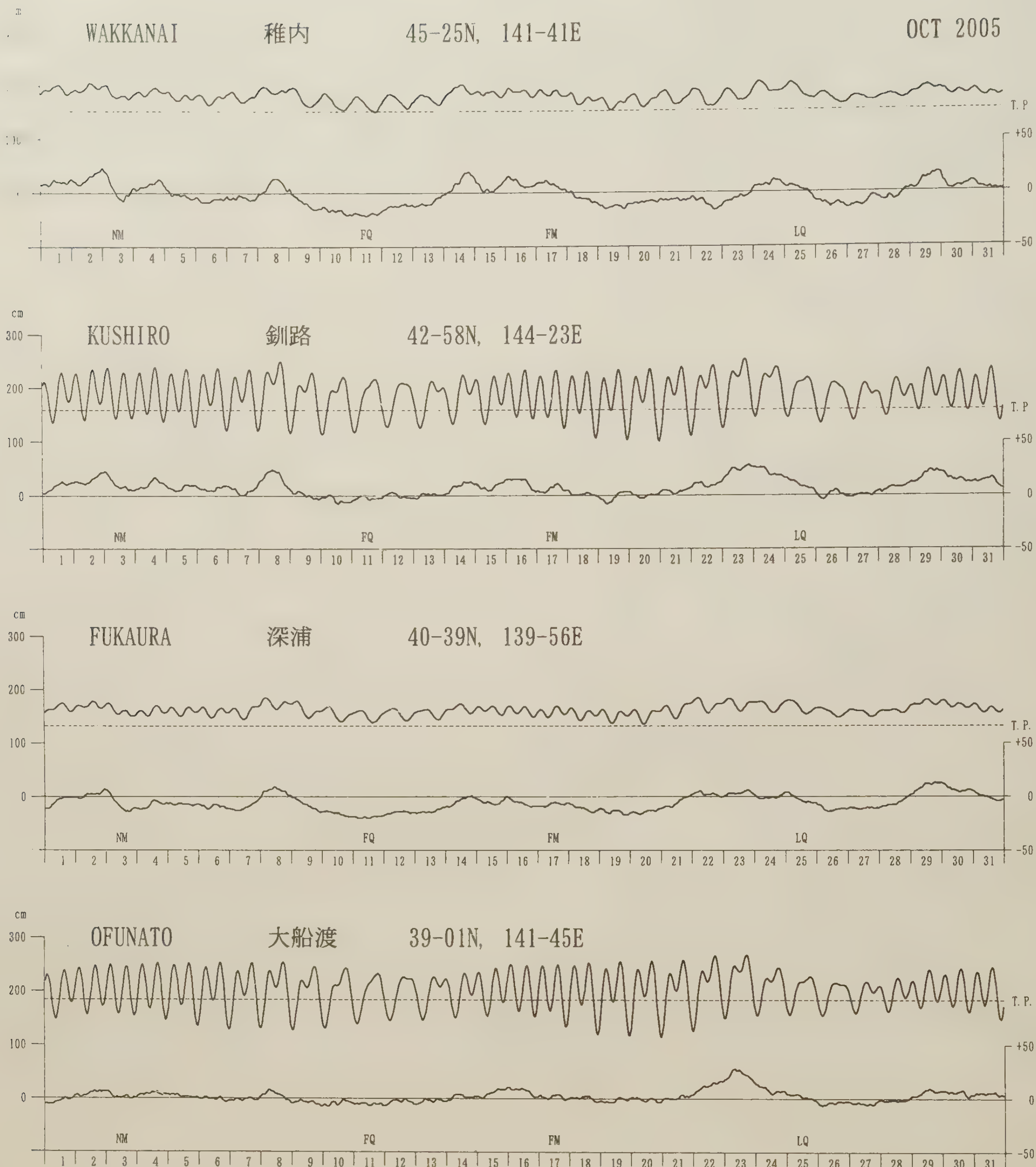


第14図 沿岸水温時系列図

Fig. 14 Time series of hourly coastal water temperatures (°C) measured at 6 coastal stations of the JMA shown in the right panel.

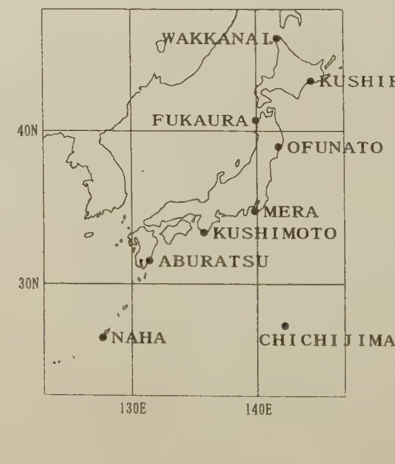
Thin lines show ten-day mean climatology.



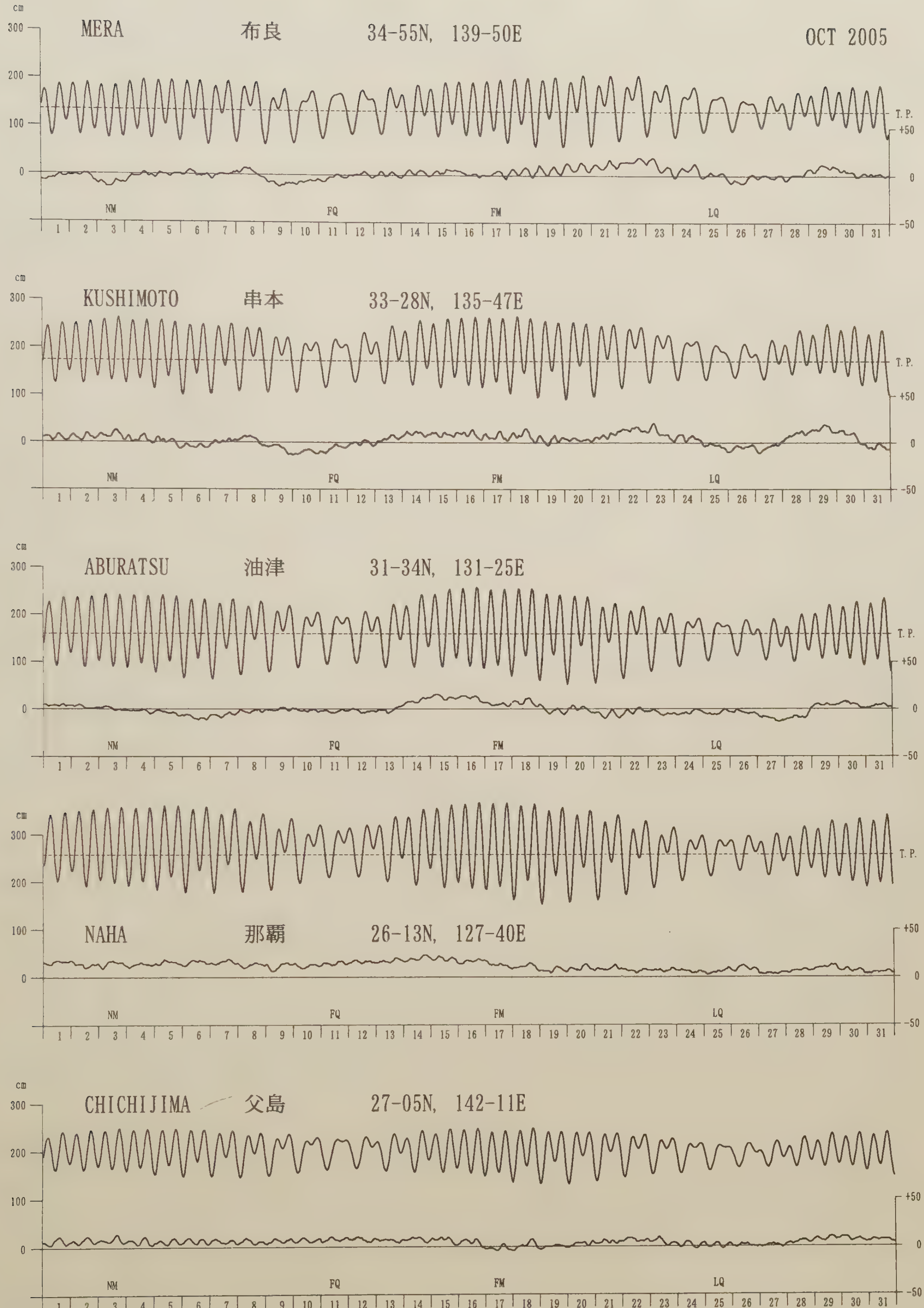


第15図 沿岸潮位時系列図（2005年10月）

Fig. 15 Time series of hourly sea level observation (upper line) and its anomalies (lower line) at 9 stations of the JMA in the right panel.
Short term variations are filtered out from raw data.



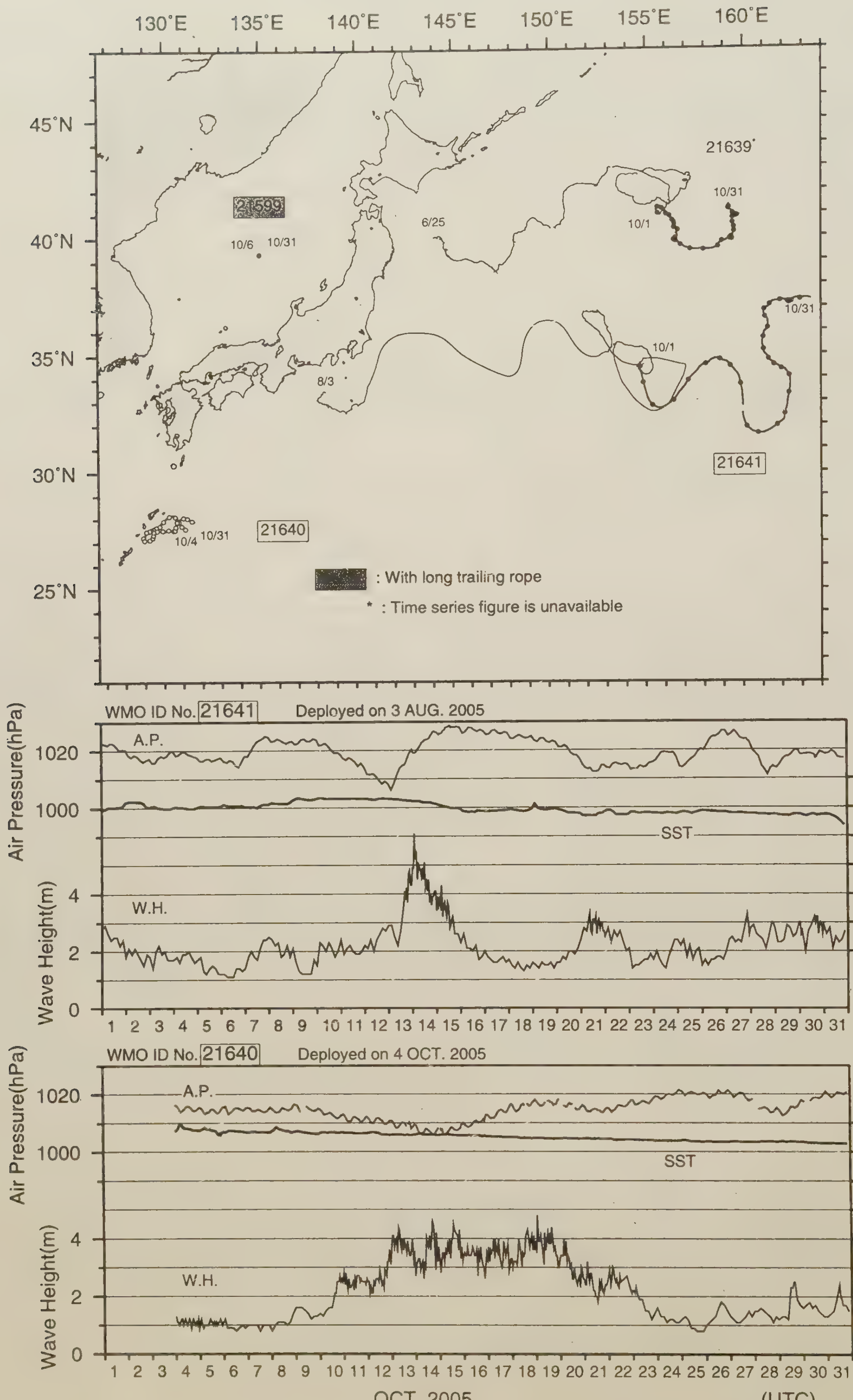
NM: new moon, FQ: first quarter
FM: full moon, LQ: last quarter
T.P.: Mean sea level of Tokyo Bay (Tokyo Peil)



第15図 つづき

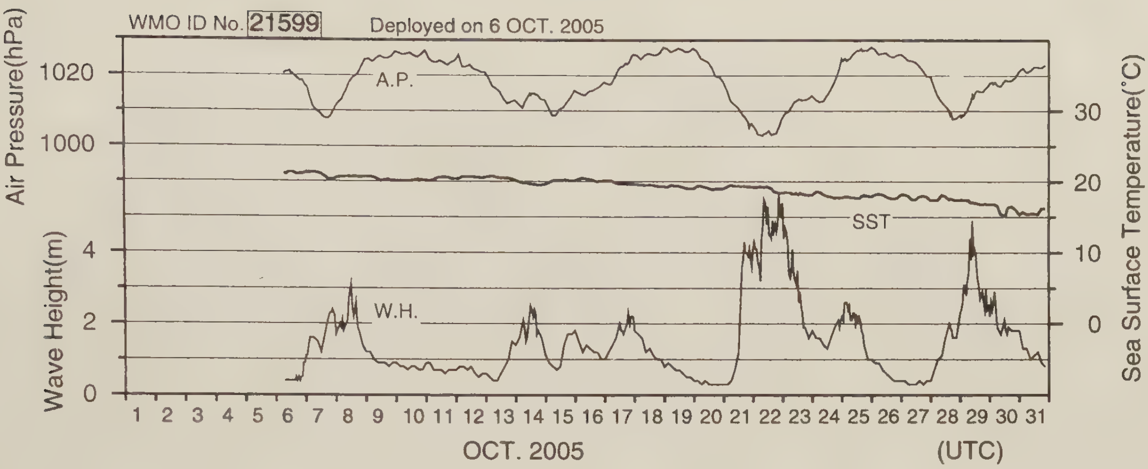
Fig. 15 (continued)

Ocean Data Buoy Observations

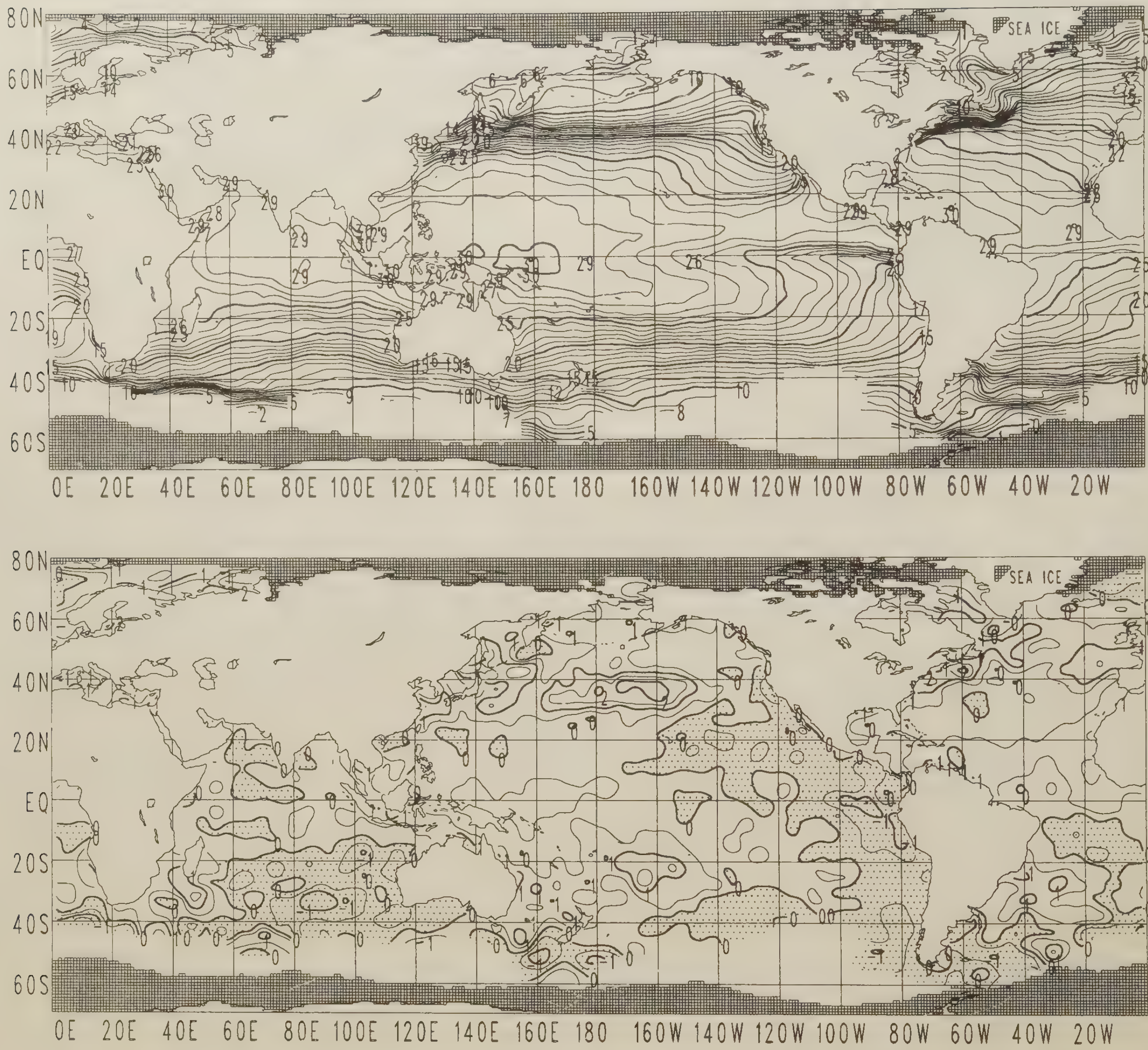


第16図　漂流型海洋気象ブイロボットの軌跡と観測要素の時系列図

Fig.16　Time series of JMA drifting buoy observation.
The upper panel shows paths of the buoys. Circles denote the position at 00h UTC everyday.
The lower panel shows time series of observation data.



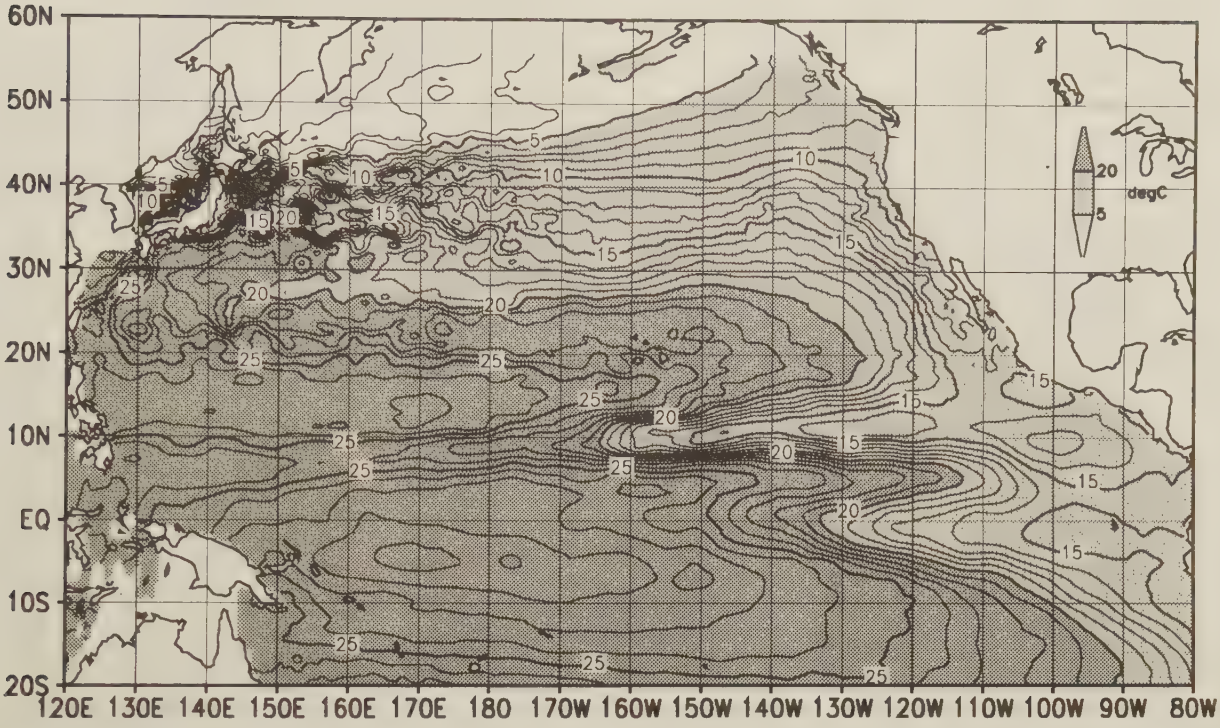
第16図 つづき
Fig.16 (continued)



第17図　全球月平均海面水温図（上）及び偏差図（下）（2005年10月）

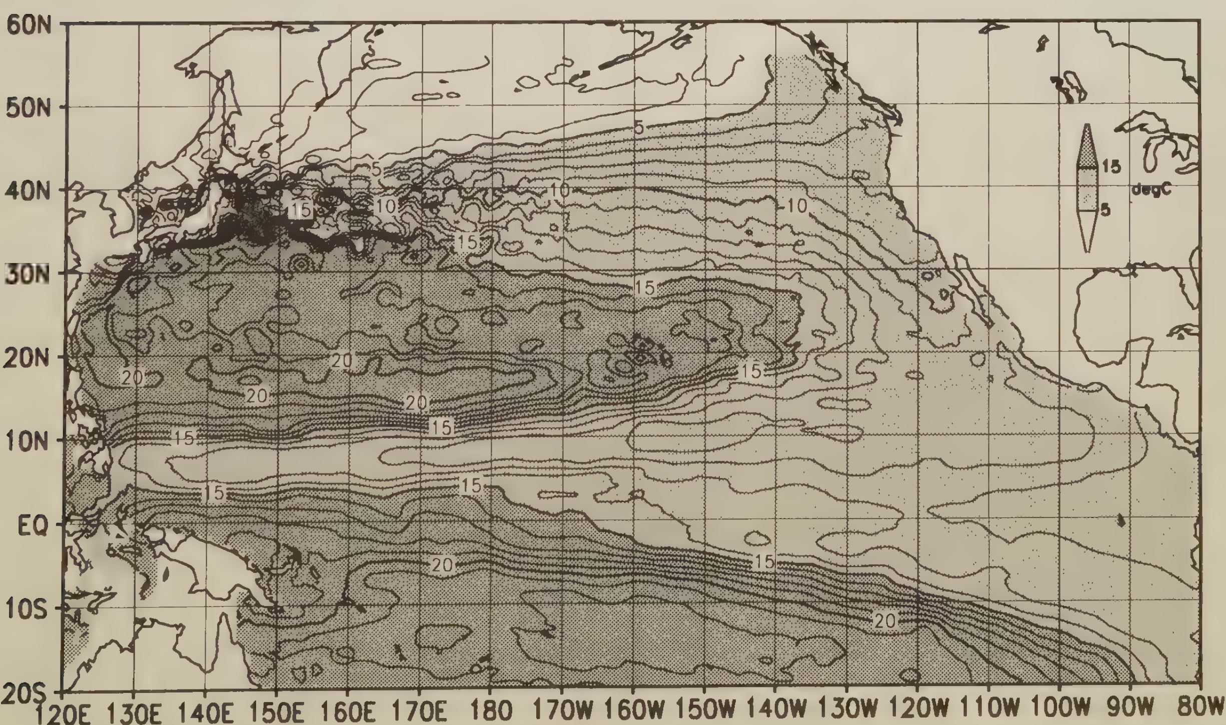
Fig. 17 Monthly mean SST over the global ocean (top) and anomalies (bottom) for October 2005. Anomalies are computed from the JMA climatology (1971-2000). Contour interval is 1°C and additional anomaly contours of ±0.5°C are shown by thin lines. Negative anomalies are stippled. Maximum coverage of sea ice is shaded. Data sources for sea ice are U.S. National Ice Center (polar regions) and JMA (the Sea of Okhotsk).

100m / 200m Temperature in the Pacific Ocean



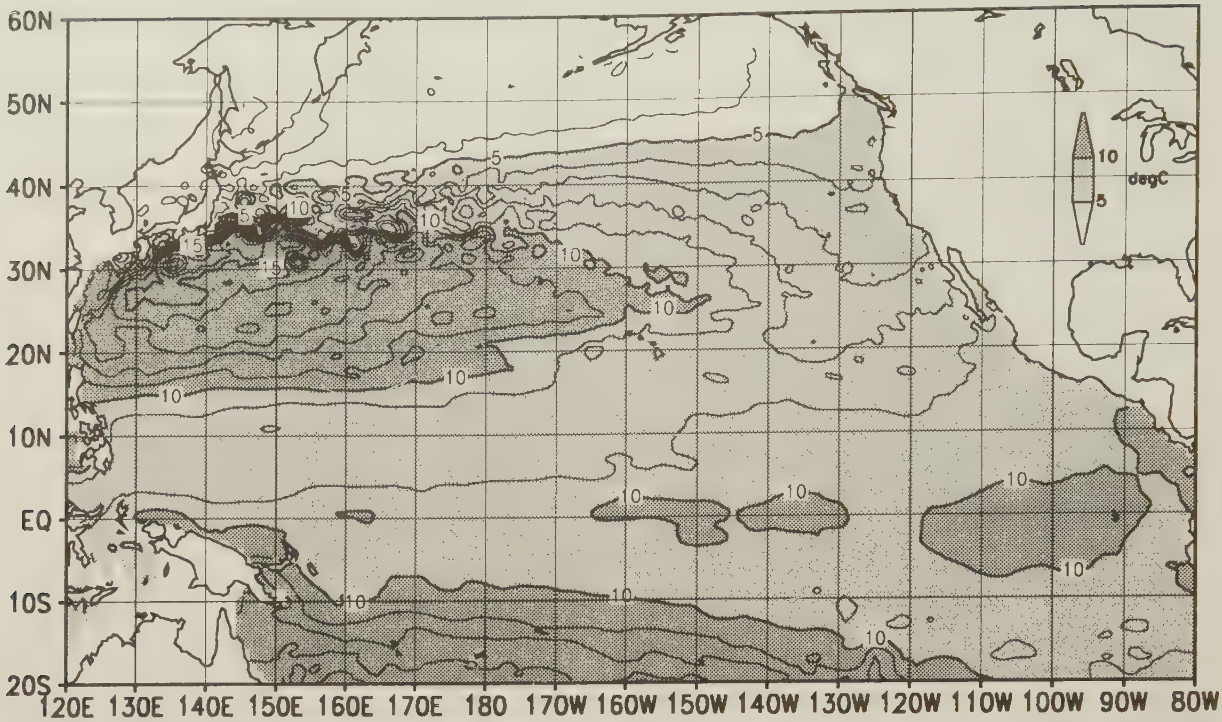
第 18 図　太平洋月平均表層水温図（深さ 100 m）　(2005 年 10 月)
（海洋総合解析システムによる）

Fig. 18　Monthly mean subsurface (100 m) temperature in the Pacific Ocean for October 2005. Contour interval is 1 ℃. (calculated by the Ocean Comprehensive Analysis System)



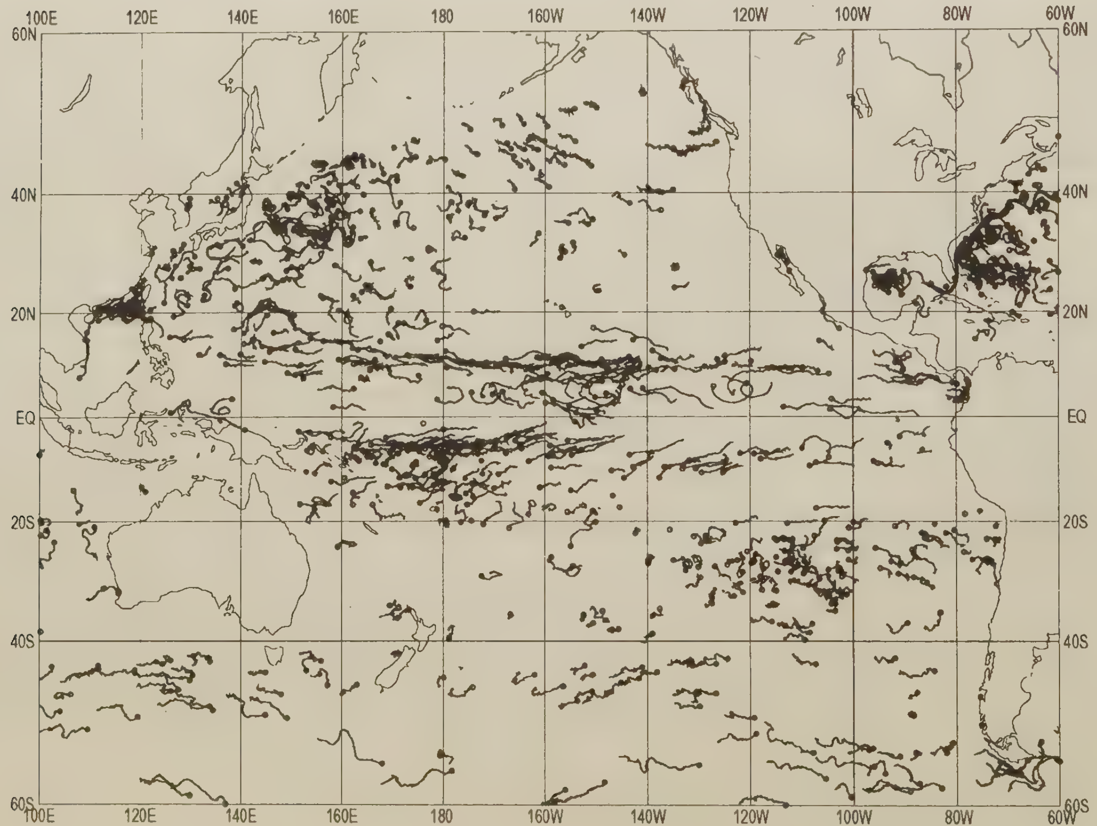
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（海洋総合解析システムによる）

Fig. 19　Monthly mean subsurface (200 m) temperature in the Pacific Ocean for October 2005. Contour interval is 1 ℃. (calculated by the Ocean Comprehensive Analysis System)



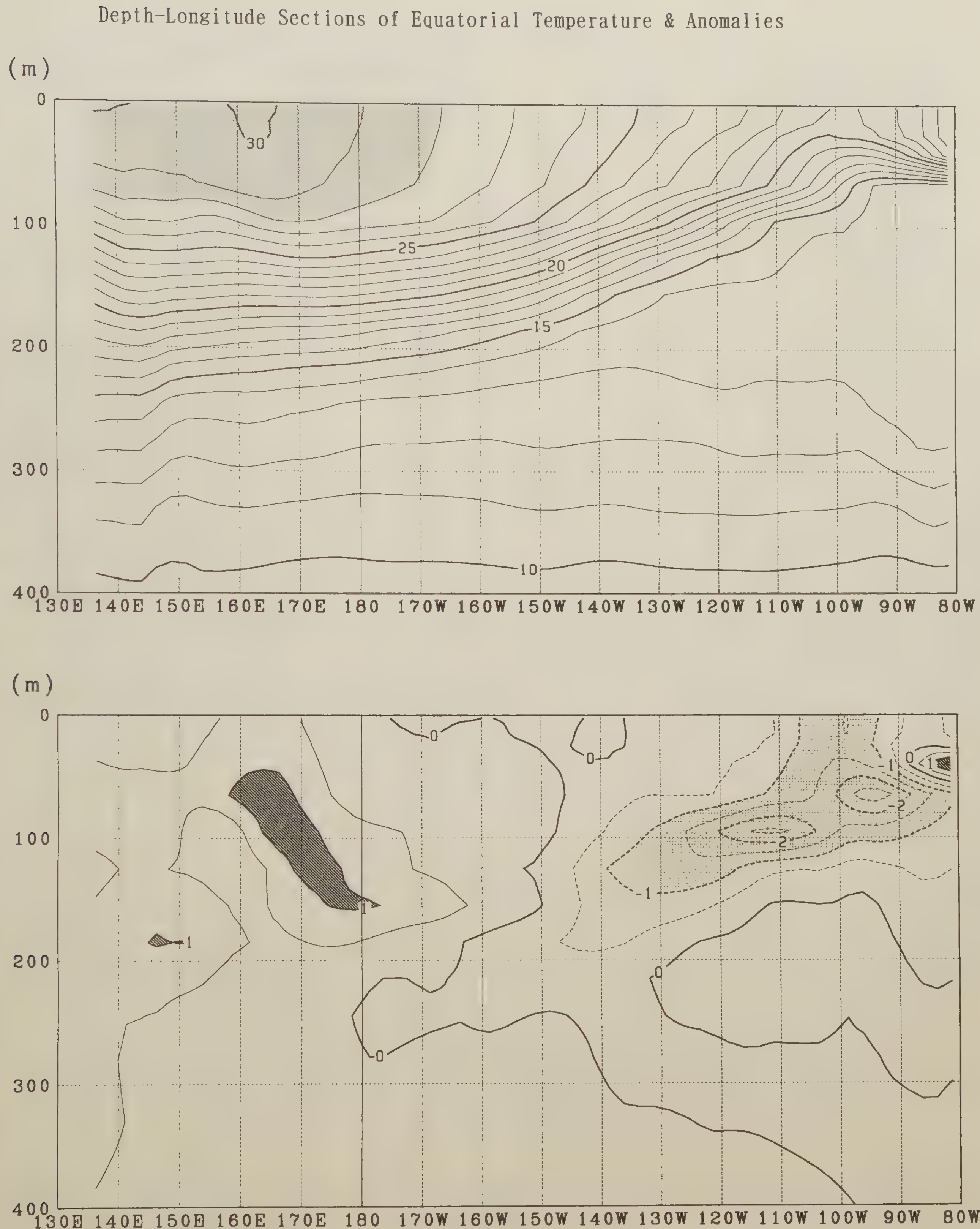
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（海洋総合解析システムによる）

Fig. 20　Monthly mean subsurface (400 m) temperature in the Pacific Ocean for October 2005. Contour interval is 1 ℃. (calculated by the Ocean Comprehensive Analysis System)



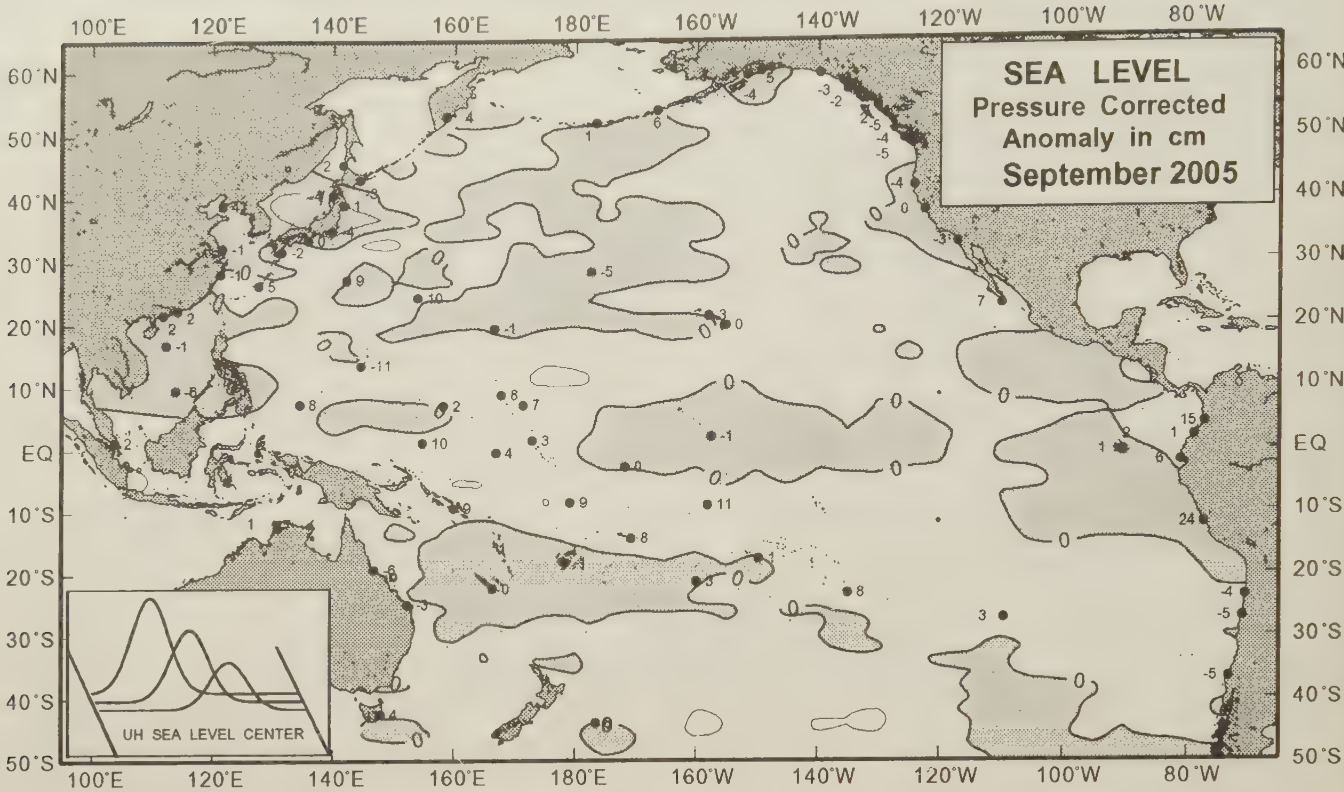
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Fig. 21　Trajectories of drifting buoys in the Pacific Ocean during October 2005. Each track is for one buoy. Small circles represent the last positions for the month.



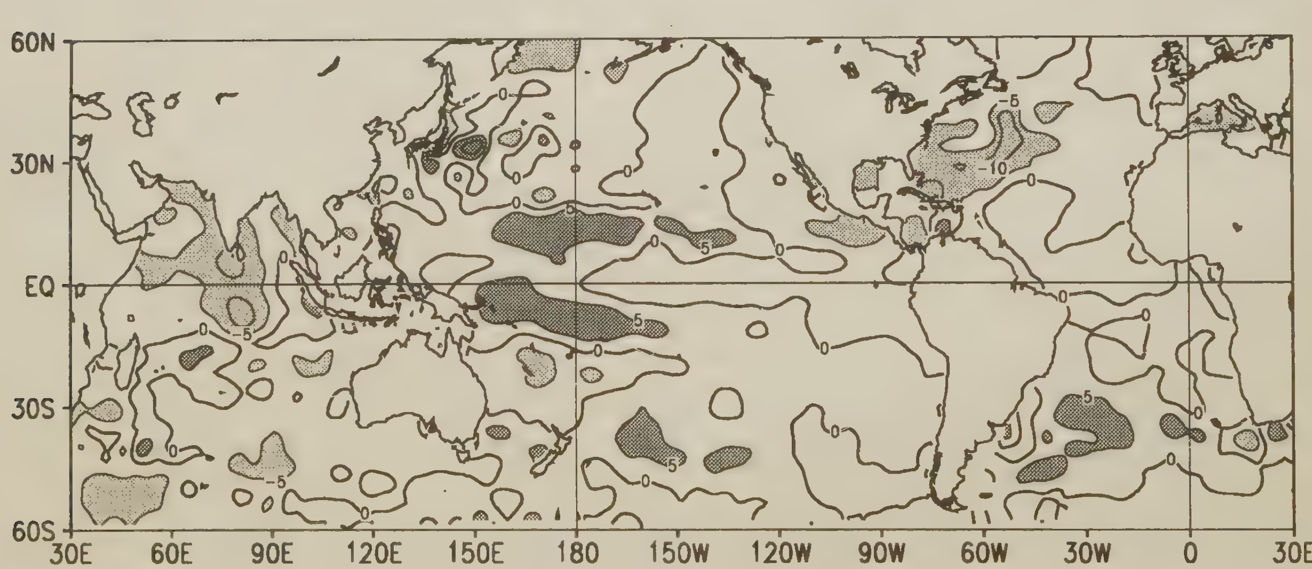
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第 23 図　太平洋月平均海面水位偏差図 （2005 年 9 月）

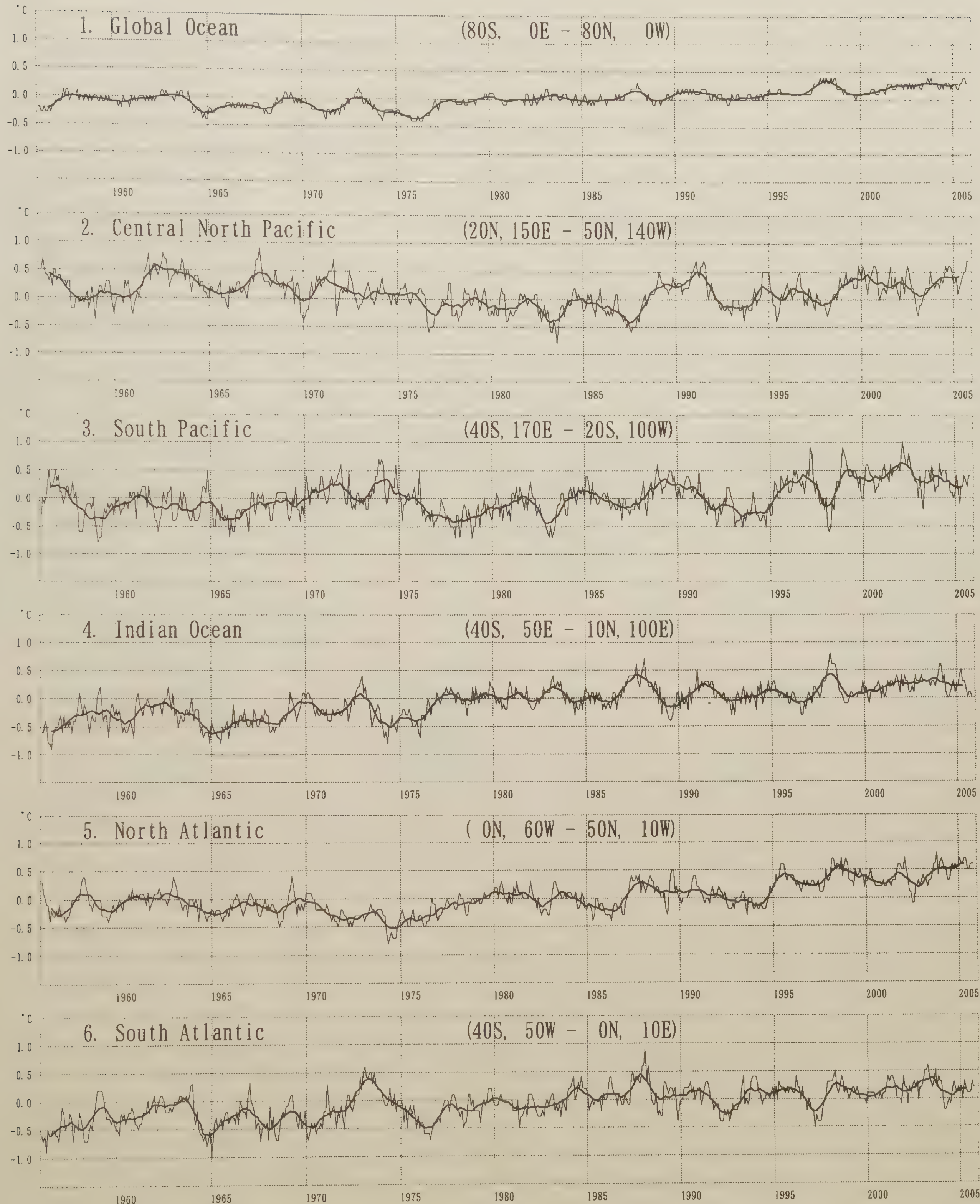
Fig. 23　Monthly sea level anomalies for September 2005 obtained from mean sea level (1993-2001) adjusted for atmospheric pressure. This figure is prepared by the SOC of ISLP-PAC, Department of Oceanography, University of Hawaii.



第 24 図　全球月平均海面高度偏差図 （2005 年 9 月）

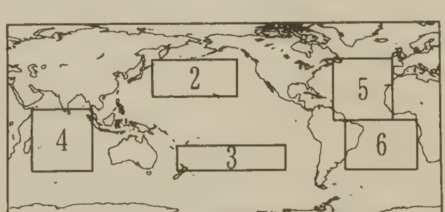
Fig. 24　Monthly sea surface height anomalies in the global ocean derived from the altimeter data of Jason-1 for September 2005. Contour interval is 5 cm. Positive anomalies exceeding +5 cm are dark-shaded and negative anomalies exceeding -5 cm are light-shaded. Anomalies are computed from 1993-1998 base period means.

Long-term Variation of Monthly Mean SST Anomalies

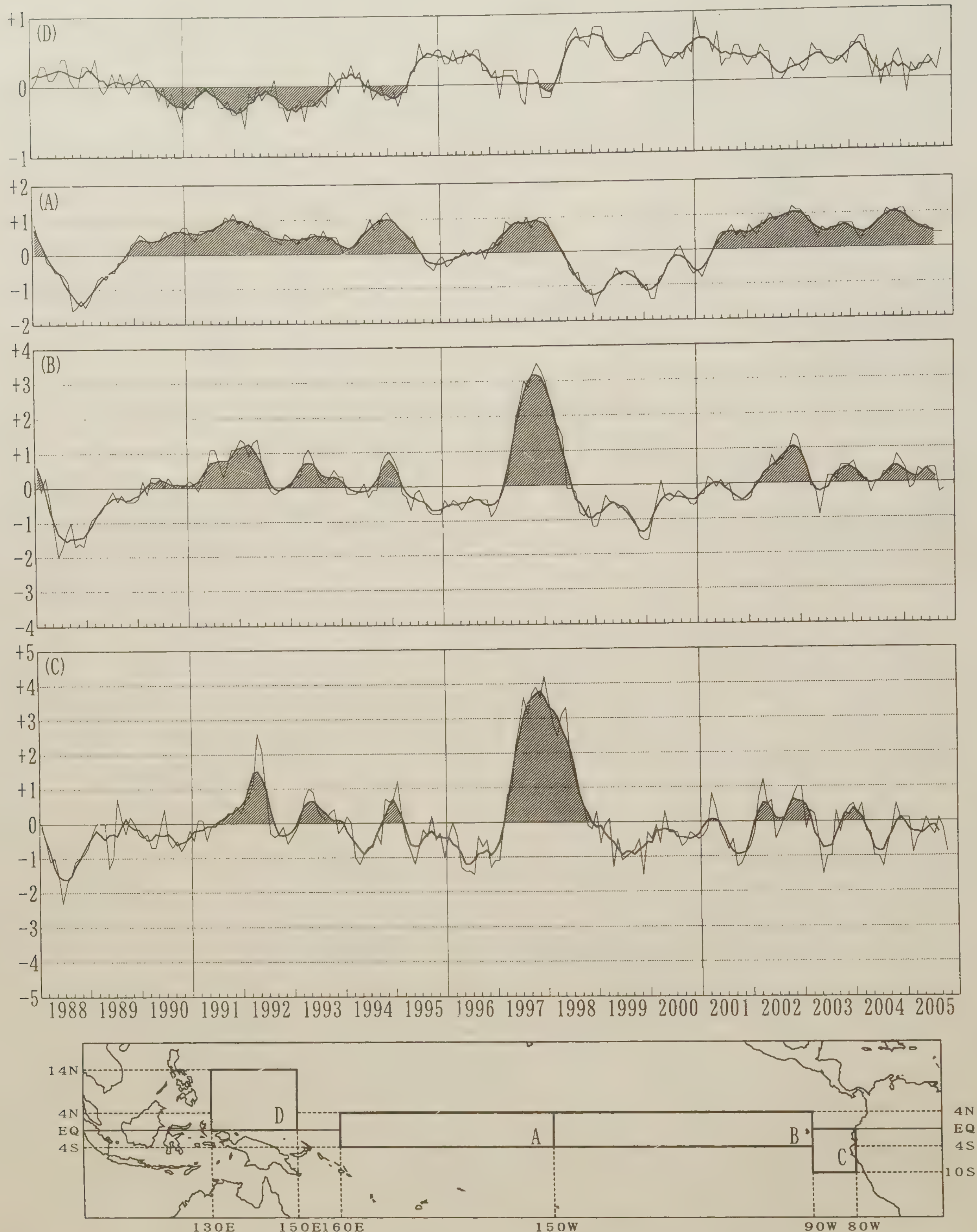


第25図 海域平均海面水温偏差の長期変動

Fig. 25 Long-term variations of monthly mean SST anomalies (°C) averaged for the sub-areas shown in the right panel. Anomalies are computed from the JMA climatology (1971-2000). Thin lines show the monthly mean and thick lines their 13-month running means.



Time Series of Tropical Pacific SST Anomalies



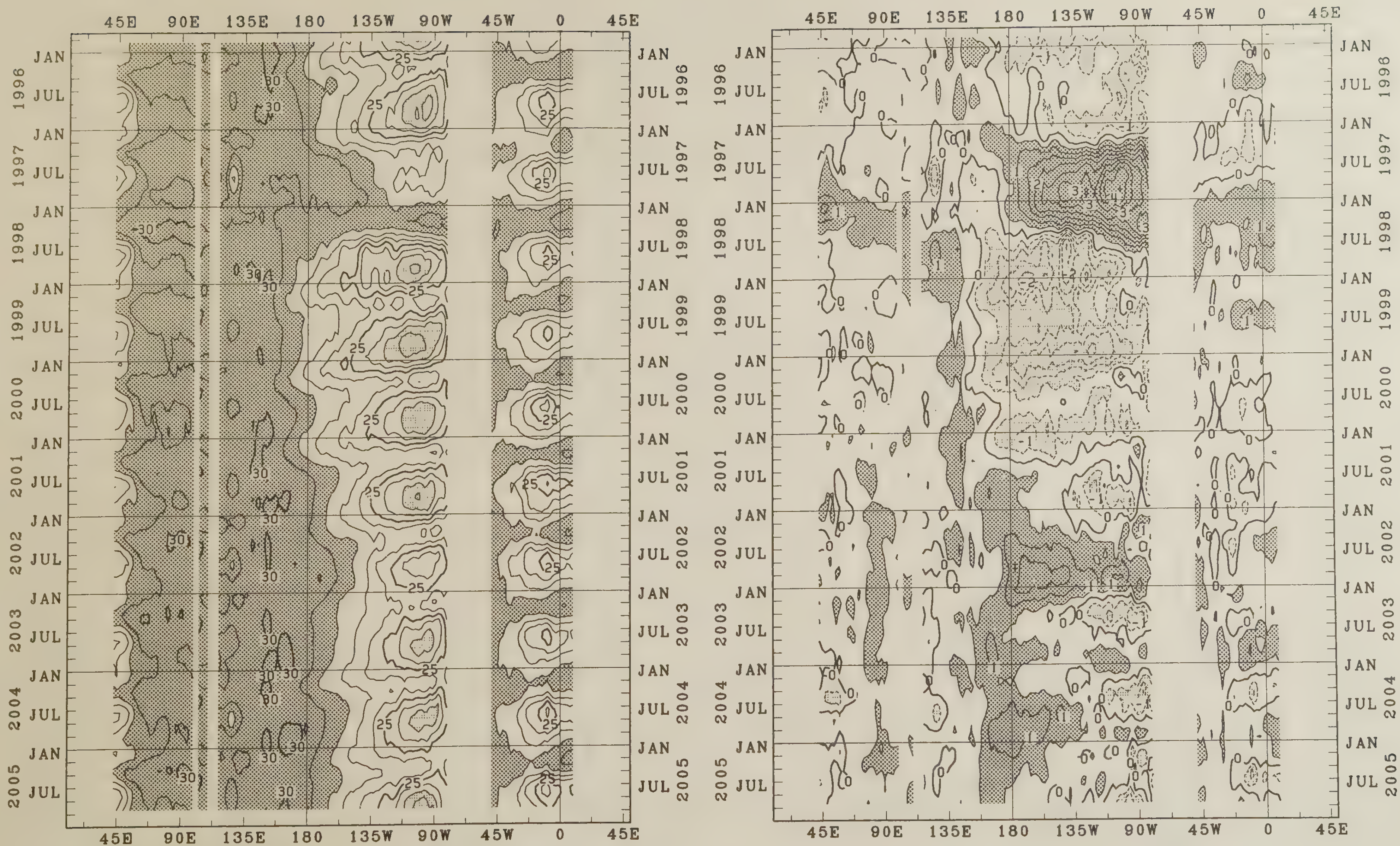
第26図　太平洋熱帯域の海面水温偏差時系列図

Fig. 26 Time series of monthly mean SST anomalies (°C) in the tropical Pacific Ocean for the areas indicated at the bottom panel.
Thin lines show the monthly means and thick lines their 5-month running means. Positive anomalies (A, B, C) and negative anomalies (D) are shaded. Anomalies are computed from the JMA climatology (1971-2000).

MONTH YEAR	SEA SURFACE TEMPERATURE AND ANOMALY (°C) REGION D 14N-EQ 130E-150E		REGION A 4N-4S 160E-150W		REGION B 4N-4S 150W-90W		REGION C EQ-10S 90W-80W		SOI	SEA LEVEL PRESSURE ANOMALY (hPa) TAHITI 17-33S 149-37W	DARWIN 12-24S 130-52E
JAN 03	28.7	0.2	29.1	1.1	26.2	0.8	24.3	-0.2	-0.1	-0.1	0.2
FEB 03	28.4	0.1	28.9	0.9	26.8	0.5	26.3	0.3	-0.5	-1.5	-0.2
MAR 03	28.7	0.2	29.0	0.9	27.0	-0.1	26.5	0.2	-0.3	-0.2	0.5
APR 03	29.3	0.5	28.8	0.6	27.1	-0.1	24.9	-0.5	-0.1	0.5	0.8
MAY 03	29.7	0.4	28.9	0.3	26.0	-0.9	22.8	-1.5	-0.6	-0.7	0.2
JUN 03	29.8	0.4	29.1	0.6	25.9	-0.3	21.9	-1.0	-0.9	-0.9	0.4
JUL 03	29.6	0.3	29.0	0.5	25.6	0.2	20.9	-1.0	0.2	0.7	0.3
AUG 03	29.4	0.2	28.9	0.5	24.9	0.2	21.2	0.3	0.0	-0.2	-0.1
SEP 03	29.5	0.2	28.9	0.5	24.8	0.1	20.2	-0.3	-0.1	-0.3	0.0
OCT 03	29.7	0.3	29.1	0.7	25.2	0.5	21.1	0.2	-0.1	-0.5	-0.4
NOV 03	29.6	0.3	29.1	0.7	25.2	0.5	22.2	0.4	-0.2	0.0	0.4
DEC 03	29.2	0.2	28.9	0.7	25.5	0.5	23.4	0.5	1.1	0.9	-1.1
JAN 04	29.0	0.5	28.7	0.7	26.0	0.6	24.7	0.2	-1.0	-1.5	0.9
FEB 04	28.8	0.5	28.4	0.4	26.5	0.2	26.5	0.5	0.8	1.4	-0.6
MAR 04	29.1	0.6	28.3	0.2	27.2	0.1	26.0	-0.3	0.1	-0.7	-1.3
APR 04	29.4	0.6	28.7	0.5	27.3	0.1	25.1	-0.3	-1.4	-1.0	1.3
MAY 04	29.6	0.3	29.1	0.5	26.6	-0.3	23.3	-1.0	1.2	0.9	-0.7
JUN 04	29.4	0.0	29.1	0.6	26.2	0.0	21.9	-1.0	-1.1	0.1	1.7
JUL 04	29.6	0.3	29.3	0.8	25.4	0.0	20.6	-1.3	-0.6	-0.2	0.9
AUG 04	29.1	-0.1	29.2	0.8	25.0	0.3	20.2	-0.7	-0.5	-0.5	0.3
SEP 04	29.5	0.2	29.5	1.1	24.9	0.2	20.3	-0.2	-0.2	0.4	0.9
OCT 04	29.4	0.0	29.4	1.0	25.1	0.4	21.4	0.5	-0.2	0.0	0.3
NOV 04	29.6	0.3	29.4	1.0	25.5	0.8	21.9	0.1	-0.7	-0.8	0.5
DEC 04	29.4	0.4	29.3	1.1	25.6	0.6	23.0	0.1	-0.7	-1.4	-0.1
JAN 05	28.7	0.2	29.1	1.1	25.8	0.4	24.6	0.1	0.3	0.3	-0.3
FEB 05	28.1	-0.2	28.7	0.7	26.1	-0.2	25.1	-0.9	-2.2	-3.8	1.9
MAR 05	28.7	0.2	28.8	0.7	27.0	-0.1	25.8	-0.5	0.2	0.8	0.5
APR 05	28.9	0.1	28.8	0.6	27.6	0.4	25.1	-0.3	-0.5	0.2	1.3
MAY 05	29.4	0.1	29.1	0.5	27.2	0.3	24.4	0.1	-1.2	-0.8	0.9
JUN 05	29.6	0.2	29.1	0.6	26.6	0.4	22.7	-0.2	0.4	0.0	-0.6
JUL 05	29.6	0.3	29.0	0.5	25.8	0.4	21.5	-0.4	0.1	0.3	0.2
AUG 05	29.4	0.2	28.8	0.4	25.1	0.4	21.0	0.1	-0.6	-0.5	0.4
SEP 05	29.4	0.1	28.8	0.4	24.4	-0.3	20.3	-0.2	0.3	0.4	-0.2
OCT 05	29.8	0.4	28.8	0.4	24.5	-0.2	20.0	-0.9	1.2	1.3	-0.8

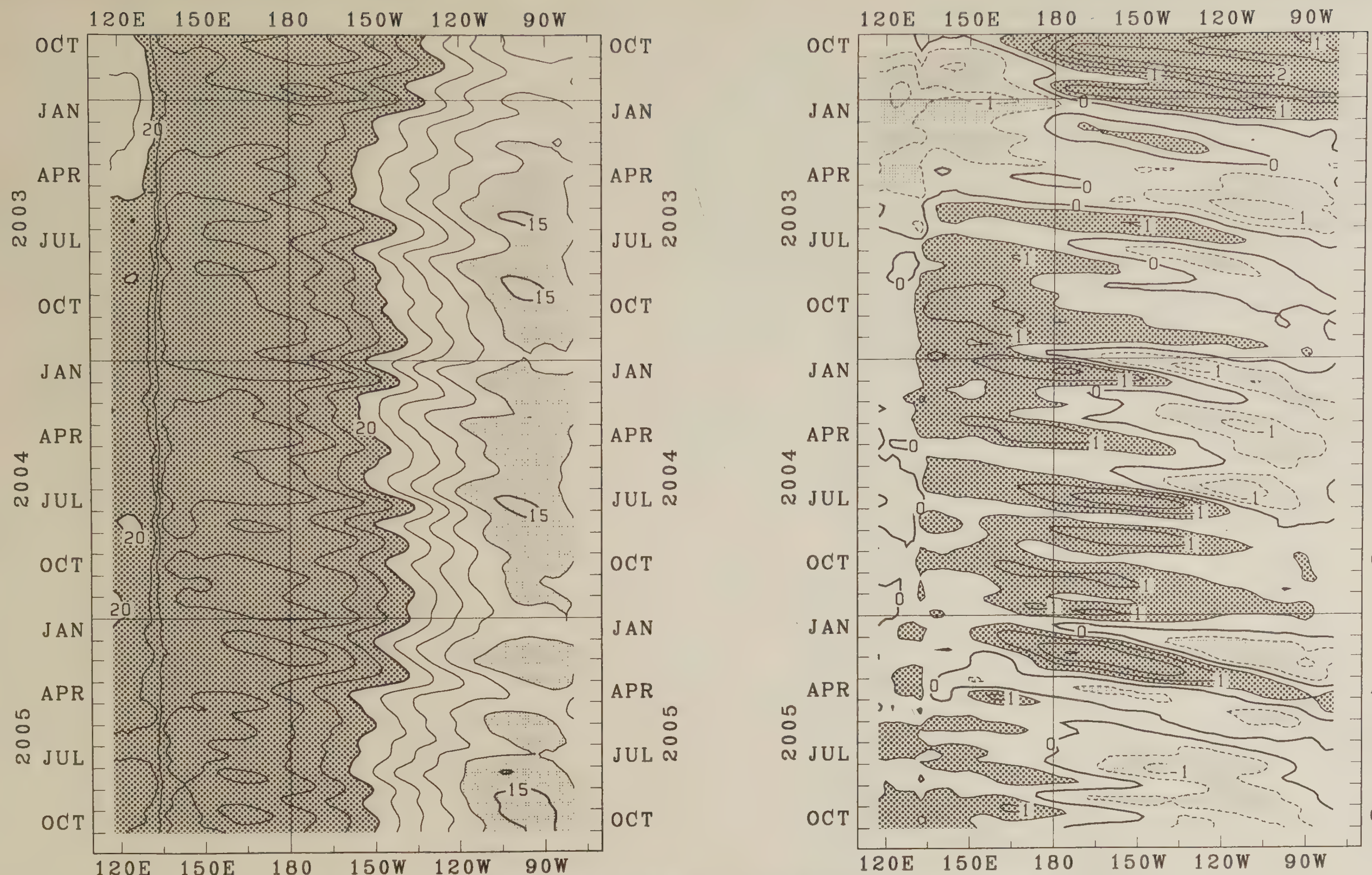
第1表　太平洋熱帯域の大気及び海洋の監視指数

Table 1 Atmospheric and oceanic monitoring indices in the tropical Pacific Ocean



第27図　赤道に沿った海面水温（左）および偏差（右）の時間-経度断面図

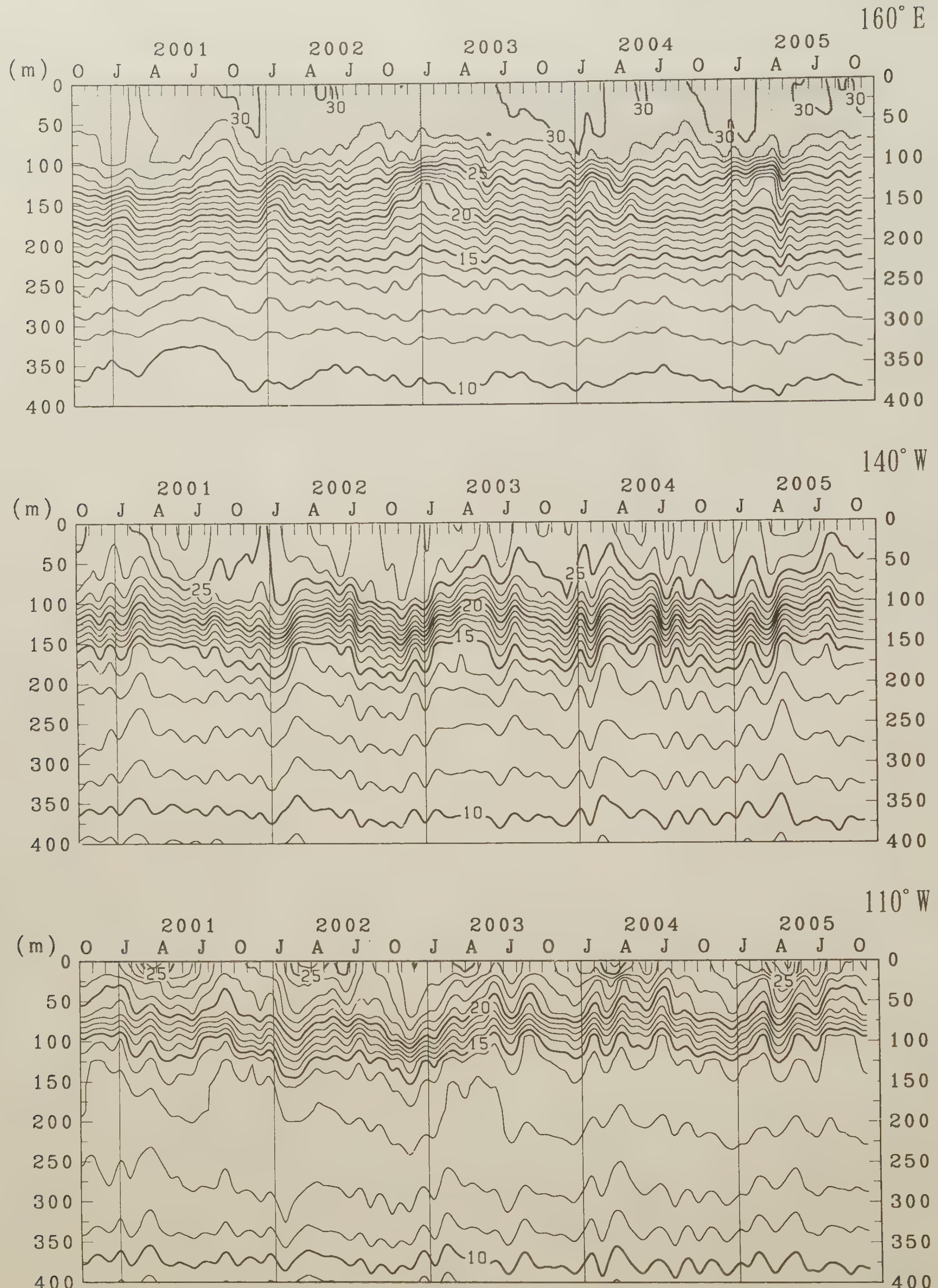
Fig. 27　Time-longitude sections of SSTs (left) and anomalies (right) along the equator (2°N-2°S) in the global ocean. Contour intervals are 1°C (left) and 0.5°C (right). Values greater than 28°C (+0.5°C) are dark-shaded and values less than 23°C (-0.5°C) are light-shaded in the left (right) panel. Dashed contours indicate negative anomalies in the right panel. Anomalies are computed from 1971-2000 base period means.



第28図　太平洋の赤道に沿う海洋表層の貯熱量（左）及び偏差（右）の時間－経度断面図

Fig. 28　Time-longitude sections of ocean heat content in the upper 260 m along the equator (left) and anomalies (right) in the Pacific Ocean. Data are derived from the Ocean Data Assimilation System of JMA. Contour intervals are 1°C (left) and 0.5°C (right). Values greater than 20°C (+0.5°C) are dark-shaded and values less than 16°C (−0.5°C) are light-shaded in the left (right) panel. Dashed contours indicate negative anomalies in the right panel. Anomalies are computed from 1987-2004 base period means.

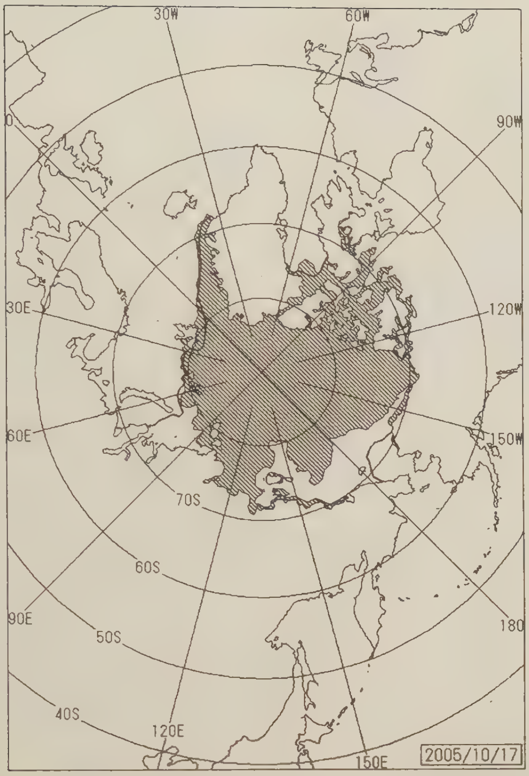
Time-depth Sections of Equatorial Subsurface Temperature



第29図　太平洋赤道域の表層水温の時間－深度断面図

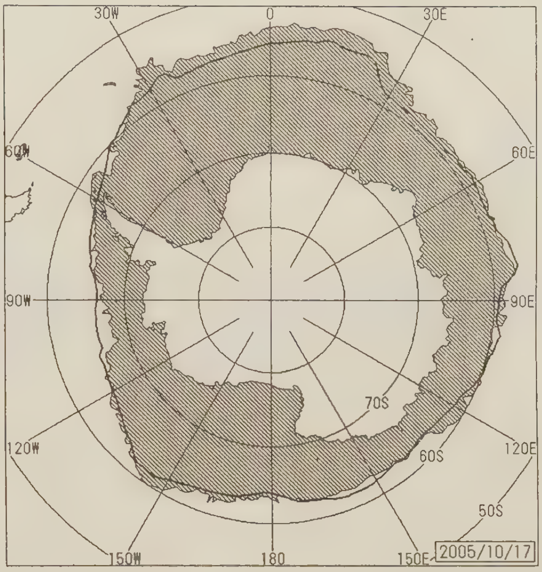
（上：西部、中：中部、下：東部）

Fig. 29 Time-depth sections of equatorial subsurface temperature for the western Pacific (top, 160°E), the central Pacific (middle, 140°W) and the eastern Pacific (bottom, 110°W). Data are derived from the Ocean Data Assimilation System of JMA. Contour interval is 1°C. Values greater than 28°C are shaded.



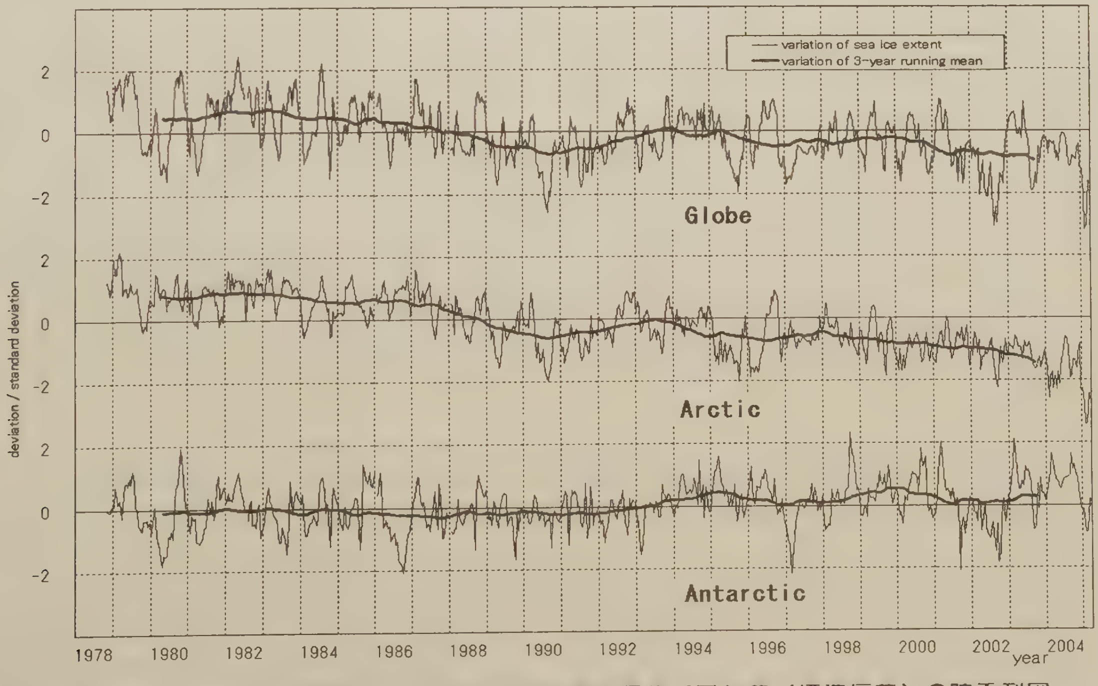
第 30-1 図　北極域の海氷図(2005 年 10 月 17 日)

Fig.30-1 Sea ice chart for the Arctic on 17 Oct. 2005.
The shaded area represents the sea ice extent. The bold line denotes the mean ice edge averaged for the period from 1979 through 2000.
The data source is the National Ice Center (USA).



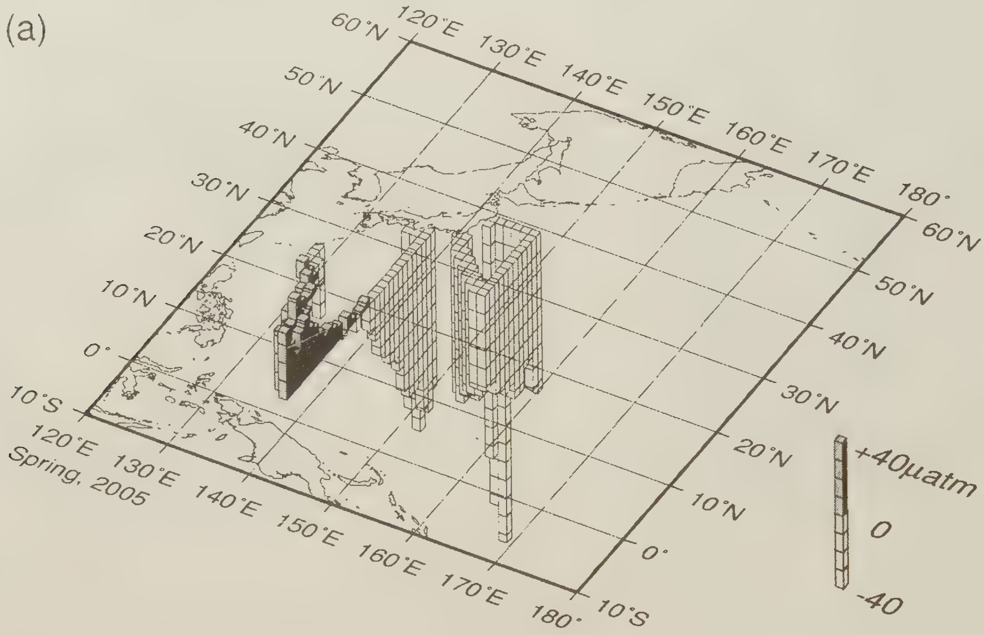
第 30-2 図　南極域の海氷図(2005 年 10 月 17 日)

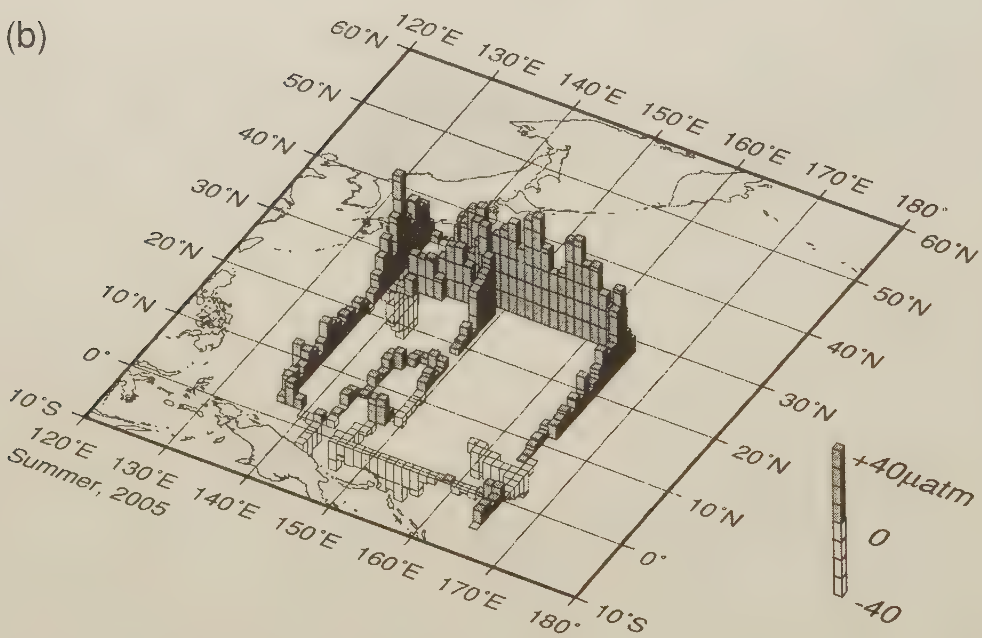
Fig.30-2 Sea ice chart for the Antarctic on 17 Oct. 2005.
The shaded area represents the sea ice extent. The bold line denotes the mean ice edge averaged for the period from 1979 through 2000.
The data source is the National Ice Center (USA).



第 30-3 図　全球、北極および南極における海氷域面積の偏差（平年差／標準偏差）の時系列図
資料は米国雪氷データセンター提供の SSM/I データによる

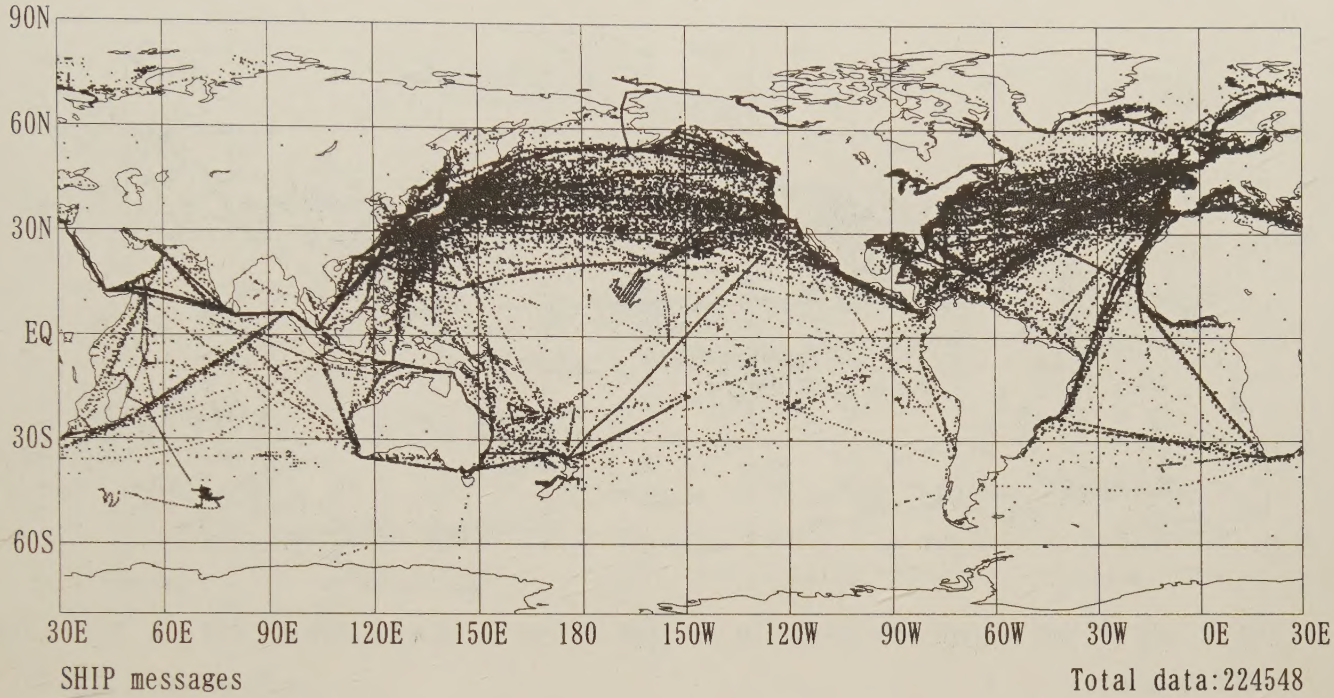
Fig.30-3 Time series of the normalized deviation (deviation from normal) / (standard deviation) of the Global, the Arctic, and the Antarctic sea ice extent (Based on SSM/I data provided by National Snow and Ice Center, USA).

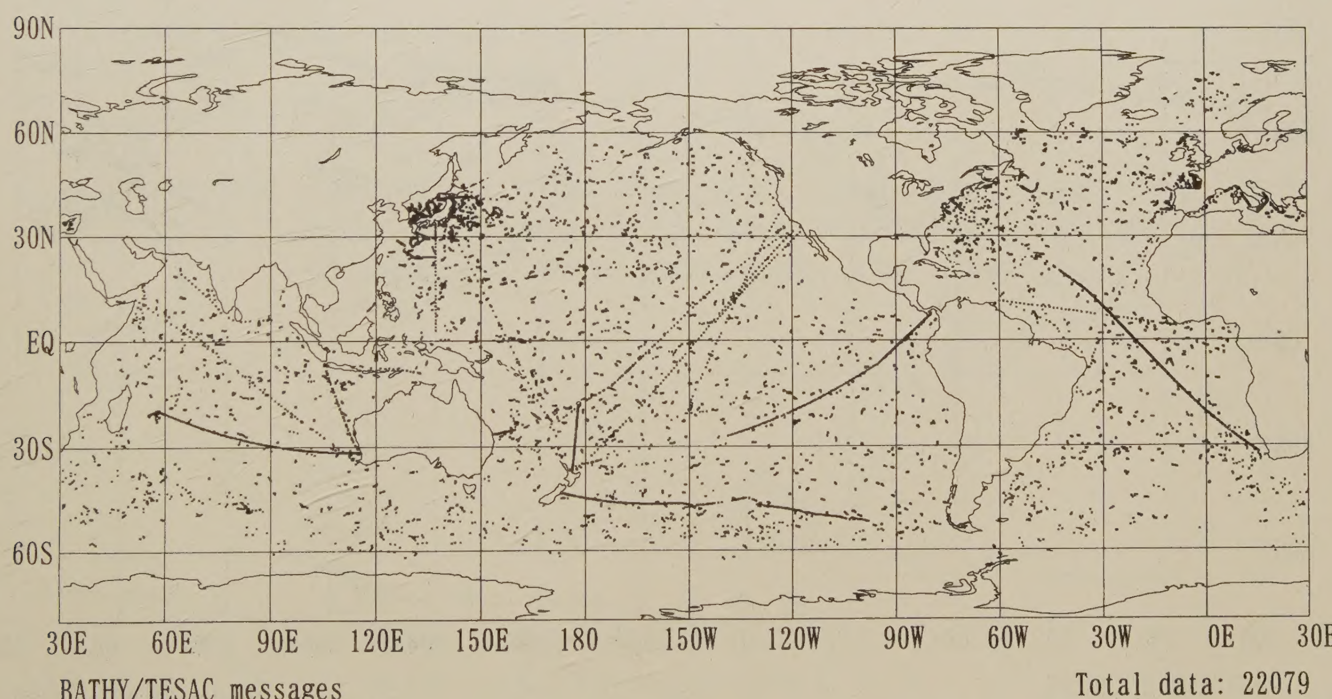




第31図　気象庁「凌風丸」及び神戸海洋気象台「啓風丸」が、(a)2005年4月21日から5月9日にかけてと、(b)2005年6月15日から8月9日にかけて北西太平洋で観測した洋上大気中と表面海水中のCO_2の濃度差。棒グラフは、海洋から大気へCO_2を放出する場合を濃い陰影、海洋が大気のCO_2を吸収する場合を薄い陰影で示してある。

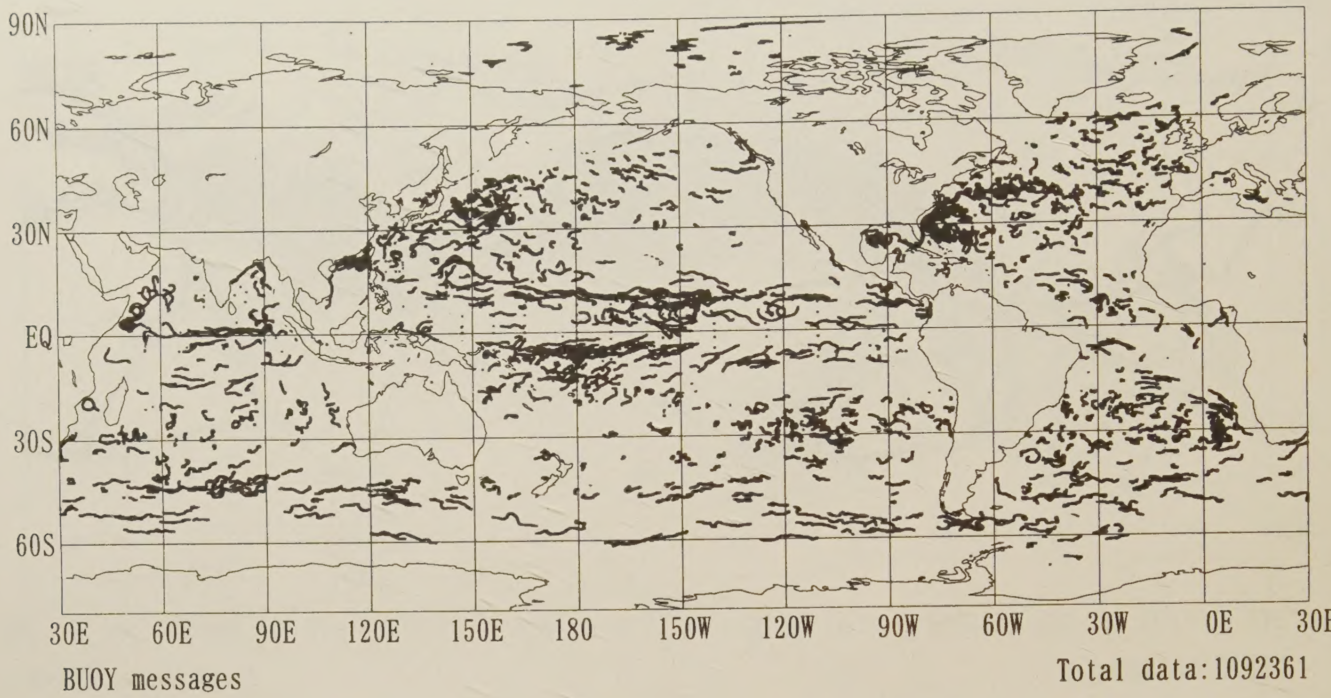
Fig. 31　Difference in the CO_2 concentration between the surface water and the overlying atmosphere in the western North Pacific observed by the R/V Ryofu Maru of the JMA and the R/V Keifu Maru of the Kobe Marine Observatory, (a) from April 21 to May 9, 2005 and (b) from June 15 to August 9, 2005. Darker-shaded upward pillars indicate that the oceanic CO_2 was emitted into the atmosphere, and lighter-shaded downward pillars indicate that the atmospheric CO_2 was absorbed into the ocean, respectively.

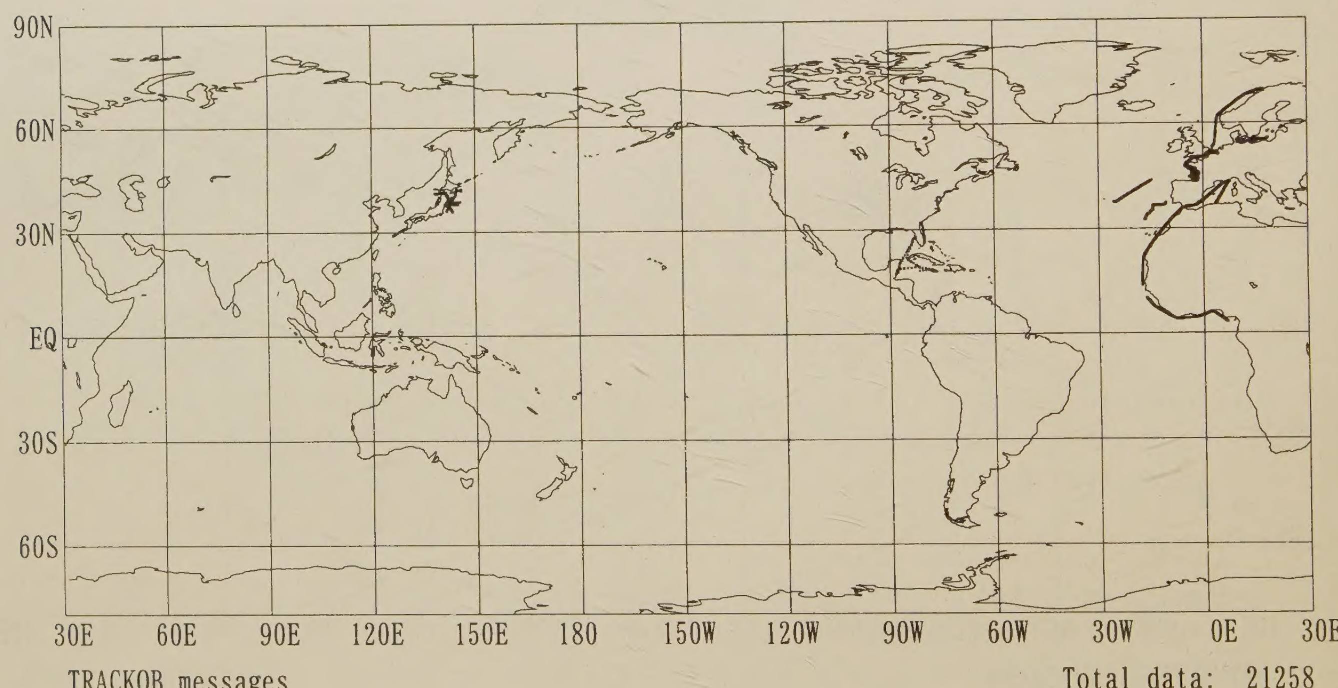




第32-1図　測点分布図(2005年10月)

Fig. 32-1 Geographical distribution of SHIP messages (top) and BATHY/TESAC messages (bottom) for October 2005.





第32-2図　測点分布図(2005年10月)

Fig. 32-2 Geographical distribution of BUOY messages (top) and TRACKOB messages (bottom) for October 2005.

気　象　庁　海　洋　月　報

Monthly Ocean Report

October 2005 (No. 154)

謝　　辞

本月報掲載の 2005 年 10 月のプロダクトには、気象庁が観測したデータ及び GTS（全球気象通信網）を通じて入手した国際気象通報式による通報のほか、下記の機関等から提供していただいたデータを使用しています。

防衛庁、海上保安庁

水産総合研究センター

海洋研究開発機構、宇宙航空研究開発機構

東京大学

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